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     (FILE 'HOME' ENTERED AT 12:10:54 ON 06 DEC 2006)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 12:11:07 ON 06 DEC 2006
L1             1 S LAMINARIN? (P) REGENERAT? (P) CELL?
L2            26 S LAMINARIN? (P) PROMOT? (P) CELL?
L3             0 S L2 AND MORROW?
L4             0 S L2 AND BONE?
L5             0 S L2 AND BLOOD?
L6             0 S L2 AND ?NEOPLAST?
L7             0 S L2 AND ?CHEMOTHERAP?
L8             0 S L2 AND ?THERAP?
L9             0 S L2 AND PATIENT?
L10            0 S L2 AND ADMINIST?
L11            0 S L2 AND PERIPHERAL
L12            0 S L2 AND CYCLOPHOS?
L13            5 S LAMINARIN (P) LEUKEM?
L14          202 S LAMINARIN? (P) INCREA? (P) CELL?
L15            0 S L14 AND MORROW?
L16            6 S L14 AND BLOOD?
L17            1 S L14 AND ?NEOPLAST?
L18            0 S L14 AND CHEMOTHER?
L19            1 S L14 AND ANTITUMOR?
L20            0 S L14 AND REJEUV?
L21            0 S L14 AND REPLEN?
L22            0 S LAMINARIN? (P) ?NEOPLAST? (P) CELL?
L23            0 S LAMINARIN? (P) ?CHEMOTHER? (P) CELL?
L24            1 S LAMINARIN? (P) ?NEOPLAST?
L25            1 S LAMINARIN? (P) ?CHEMOTHER?
L26            0 S LAMINARIN? (P) CLYCOPHOSPHAMIDE?
L27            2 S LAMINARIN? (P) CYCLOPHOSPHAMIDE?
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L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:466355 CAPLUS
DOCUMENT NUMBER: 109:66355
TITLE: Preparation, analysis and biological activities of laminarin and laminarin sulfate
AUTHOR(S): Fan, Manfang; Chen, Qionghua
CORPORATE SOURCE: Div. Biochem., China Pharm. Univ., Nanjing, Peop. Rep. China
SOURCE: Zhongguo Yaoke Daxue Xuebao (1988), 19(1), 30-4
CODEN: ZHYXE9; ISSN: 1000-5048
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Laminarin (I) and I sulfate were obtained from Luminaria japonica. These two polysaccharides contained 60.4 and 31.1% sugar, resp., without protein and nucleic acid. Mol. wts. were 40,000 and 80,000 resp. The acute LD50 of the two polysaccharides by i.p. injection in mice were 980 and 689 mg/kg, resp. I and I sulfate enhanced the phagocytosis of macrophage and increased the content of hemolysin in serum of the sensitized mice. They stimulated lymphocyte transformation. In addition, I caused red cell agglutination. The two polysaccharides showed a remarkable antagonistic action to leukopenia, while I also had a remarkable antiradiation effect. The two polysaccharides decreased the concentration of cholesterol in serum. I sulfate was capable of delaying fibrin clotting time and thrombinogen time. It promoted solution of euglobulin of rabbits in vivo. Nevertheless, I showed much less remarkable effects.

L4 ANSWER 9 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:905988 CAPLUS
DOCUMENT NUMBER: 124:21035
TITLE: Comparison of the immunopharmacological activities of triple and single-helical schizophyllan in mice
AUTHOR(S): Ohno, Naohito; Miura, Noriko N.; Chiba, Norihisa; Adachi, Yoshiyuki; Yadomae, Toshiro
CORPORATE SOURCE: Lab. Immunopharmacology Microbial Products, Tokyo Univ. Pharmacy, Tokyo, 192-03, Japan
SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(9), 1242-7
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB (1→3)-β-D-Glucans exhibit a variety of biol. and immunopharmacol. activities, and the significance of these activities is dependent on the structure of the glucans such as mol. weight, degree of branching, and conformation. Based on the generally accepted evidence that the conformation of clin. used Sonifilan (SPG) is a triple helix, we prepared alkaline treated SPG (SPG-OH) as a single helix conformer. In this report, we examined (A) the antitumor effect on a solid form tumor in vivo, (B) hematopoietic response on cyclophosphamide-induced leukopenia , (C) antagonistic effect for zymosan mediated-hydrogen peroxide synthesis on peritoneal macrophage (PM), (D) priming effect of lipopolysaccharide (LPS) triggered tumor necrosis factor (TNF) synthesis, (E) nitric oxide synthesis on PM in vivo and (F) hydrogen peroxide synthesis of PM in vivo. Both SPG and SPG-OH showed a significant effect on (A) and (B). The activity on (C) was stronger in SPG than SPG-OH. The activities of (D), (E), and (F) were stronger in SPG-OH. These facts strongly suggested that the glucan-mediated immunopharmacol. activities were dependent on the helical conformation and the conformation dependency varied dependent on the assays used.

L4 ANSWER 10 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:574683 CAPLUS
DOCUMENT NUMBER: 103:174683
TITLE: Glucan effect on the survival of mice after radiation exposure
AUTHOR(S): Petruczenko, Andrzej
CORPORATE SOURCE: Wojsk. Inst. Hig. Epidemiol., Warsaw, 00-967, Pol.
SOURCE: Acta Physiologica Polonica (1984), 35(3), 231-6
CODEN: APYPAY; ISSN: 0044-6033
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Glucan (1,3-polyglucopyranose) injected i.p. to mice prior to x-irradiation prolonged their survival time, made leukopenia and loss of spleen mass less pronounced, and enhanced the percent of peroxidase-pos. cells in the bone marrow.

L4 ANSWER 11 OF 18 MEDLINE on STN
ACCESSION NUMBER: 2002384298 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12132673
TITLE: Effect of SCG, 1,3-beta-D-glucan from Sparassis crispa on the hematopoietic response in cyclophosphamide induced leukopenic mice.
AUTHOR: Harada Toshie; Miura Noriko; Adachi Yoshiyuki; Nakajima Mitsuhiro; Yadomae Toshiro; Ohn Naohito
CORPORATE SOURCE: Laboratory for Immunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy & Life Science, Hachioji, Japan.
SOURCE: Biological & pharmaceutical bulletin, (2002 Jul) Vol. 25, No. 7, pp. 931-9.

Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200301
ENTRY DATE: Entered STN: 23 Jul 2002
Last Updated on STN: 9 Jan 2003
Entered Medline: 8 Jan 2003

AB Sparassis crispa Fr. is an edible mushroom recently cultivable in Japan. It contains a remarkably high content of 6-branched 1,3-beta-D-glucan showing antitumor activity. Using ion-exchange chromatography, a purified beta-glucan preparation, SCG, was prepared. In this study, we examined the hematopoietic response by SCG in cyclophosphamide (CY)-induced leukopenic mice. SCG enhanced the hematopoietic response in CY induced leukopenic mice by intraperitoneal routes over a wide range of concentrations. SCG enhanced the hematopoietic response in CY-treated mice by prior or post administration. Analyzing the leukocyte population by flow cytometry, monocytes and granulocytes in the peritoneal cavity, liver, spleen and bone marrow (BM) recovered faster than in the control group. The ratio of natural killer cells and gammadelta T cells in the liver, spleen and peritoneal cavity was also increased. In contrast, CD4+ CD8+ cells in the thymus were temporarily significantly decreased by the administration of SCG. Interleukin-6 (IL-6) production of CY+SCG-treated peritoneal exdated cells (PECs), spleen cells and bone marrow cells (BMCs) were higher than that of the CY-treated group. By in vitro culture of CY-treated PEC and spleen cells, IL-6 production was enhanced by the addition of SCG. These facts suggested the possibility that IL-6 might be a key cytokine for the enhanced hematopoietic response by SCG.

L4 ANSWER 12 OF 18 MEDLINE on STN
ACCESSION NUMBER: 2001084075 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10919368
TITLE: Antitumor 1,3-beta-glucan from cultured fruit body of Sparassis crispa.
AUTHOR: Ohno N; Miura N N; Nakajima M; Yadomae T
CORPORATE SOURCE: Laboratory of lmmunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy & Life Science, Hachioji, Tokyo, Japan.. ohnonao@ps.toyaku.ac.jp
SOURCE: Biological & pharmaceutical bulletin, (2000 Jul) Vol. 23, No. 7, pp. 866-72.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 22 Mar 2001
Last Updated on STN: 22 Mar 2001
Entered Medline: 18 Jan 2001

AB Sparassis crispa is an edible mushroom recently cultivable in Japan. Polysaccharide fractions were prepared from the cultured S. crispa by repeated extraction with hot water (SCHWE), cold NaOH (SCCA), and then hot NaOH (SCHA). HWE was further separated by 1 volume (SCHWE1v) or 4 volumes (SCHWE4v) of ethanol-precipitable fractions. By chemical, enzymic, and NMR analyses, the primary structures of SCHWE1v, SCCA, and SCHA were 6-branched 1,3-beta-glucan, having one branch in approximately every third mainchain unit. All of these fractions showed antitumor activity to the solid form of Sarcoma 180 in ICR mice with strong vascular dilation and hemorrhage reaction. These fractions also showed enhanced hematopoietic response to cyclophosphamide induced leukopenic mice following intraperitoneal or peroral administration.

L4 ANSWER 13 OF 18 MEDLINE on STN
ACCESSION NUMBER: 2000461639 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10952573
TITLE: Efficacy of the echinocandin caspofungin against disseminated aspergillosis and candidiasis in cyclophosphamide-induced immunosuppressed mice.
AUTHOR: Abruzzo G K; Gill C J; Flattery A M; Kong L; Leighton C; Smith J G; Pikounis V B; Bartizal K; Rosen H
CORPORATE SOURCE: Infectious Diseases, Merck Research Laboratories, Rahway, New Jersey 07065-0900, USA.. george_abruzzo@merck.com
SOURCE: Antimicrobial agents and chemotherapy, (2000 Sep) Vol. 44, No. 9, pp. 2310-8.
Journal code: 0315061. ISSN: 0066-4804.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200009
ENTRY DATE: Entered STN: 5 Oct 2000
Last Updated on STN: 5 Oct 2000
Entered Medline: 25 Sep 2000

AB The in vivo efficacy of the echinocandin antifungal caspofungin acetate (caspofungin; MK-0991) was evaluated in models of disseminated aspergillosis and candidiasis in mice with cyclophosphamide (CY)-induced immunosuppression. Caspofungin is a 1, 3-beta-D-glucan synthesis inhibitor efficacious against a number of clinically relevant fungi including Aspergillus and Candida species. Models of CY-induced transient or chronic leukopenia were used with once daily administration of therapy initiated 24 h after microbial challenge. Caspofungin was effective in treating disseminated aspergillosis in mice that were transiently leukopenic (significant prolongation of survival at doses of > or =0.125 mg/kg of body weight and a 50% protective dose [PD(50)] of 0.245 mg/kg/day at 28 days after challenge) or chronically leukopenic (50 to 100% survival at doses of > or =0.5 mg/kg and PD(50)s ranging from 0.173 to 0.400 mg/kg/day). Caspofungin was effective in the treatment and sterilization of Candida infections in mice with transient leukopenia with a 99% effective dose based on reduction in log(10) CFU of Candida albicans/gram of kidneys of 0.119 mg/kg and 80 to 100% of the caspofungin-treated mice having sterile kidneys at caspofungin doses from 0.25 to 2.0 mg/kg. In Candida-infected mice with chronic leukopenia, caspofungin was effective at all dose levels tested (0.25 to 1.0 mg/kg), with the log(10) CFU of C. albicans/gram of kidneys of caspofungin-treated mice being significantly lower (>99% reduction) than that of sham-treated mice from day 4 to day 28 after challenge. Also, 70 to 100% of the caspofungin-treated, chronic leukopenic mice had sterile kidneys at caspofungin doses of 0.5 to 1.0 mg/kg from day 8 to 28 after challenge. Sterilization of Candida infections by caspofungin in the absence of host leukocytes provides compelling in vivo evidence for fungicidal activity against C. albicans. Further human clinical trials with caspofungin against serious fungal infections are in progress.

L4 ANSWER 14 OF 18 MEDLINE on STN
ACCESSION NUMBER: 2000175496 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10708886
TITLE: Immunopharmacological and immunotoxicological activities of a water-soluble (1-->3)-beta-D-glucan, CSBG from Candida spp.
AUTHOR: Tokunaka K; Ohno N; Adachi Y; Tanaka S; Tamura H; Yadomae T
CORPORATE SOURCE: Laboratory for Immunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Science, 1432-1 Horinouchi, Hachioji, Tokyo, Japan.
SOURCE: International journal of immunopharmacology, (2000 May) Vol. 22, No. 5, pp. 383-94.

Journal code: 7904799. ISSN: 0192-0561.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200005
ENTRY DATE: Entered STN: 12 May 2000
Last Updated on STN: 12 May 2000
Entered Medline: 4 May 2000

AB We have established a convenient, two-step procedure to solubilize the yeast cell wall (1-->3)-beta-D-glucan using the combination of NaClO oxidation and DMSO extraction. Candida soluble beta-D-glucan (CSBG) was mainly composed of a linear beta-1,3 glucan with a linear beta-1,6-glucan moiety. In this study, we screened for several immunopharmacological activities of CSBG and found the following activities: (1) interleukin-6 synthesis of macrophages in vitro; (2) antagonistic effect for zymosan mediated-tumor necrosis factor synthesis of macrophages; (3) augmentation for lipopolysaccharide mediated tumor necrosis factor and nitrogen oxide syntheses of macrophages; (4) activation of alternative pathway of complement; (5) hematopoietic response on cyclophosphamide induced leukopenia; (6) the antitumor effect on ascites form tumor; (7) Enhanced vascular permeability; (8) priming effect on lipopolysaccharide triggered TNF-alpha synthesis; and (9) adjuvant effect on antibody production. These results strongly suggested that CSBG possessed various immunopharmacological activity.

L4 ANSWER 15 OF 18 MEDLINE on STN
ACCESSION NUMBER: 1999161281 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10052129
TITLE: Increase of hematopoietic responses by triple or single helical conformer of an antitumor (1-->3)-beta-D-glucan preparation, Sonifilan, in cyclophosphamide-induced leukopenic mice.
AUTHOR: Tsuzuki A; Tateishi T; Ohno N; Adachi Y; Yadomae T
CORPORATE SOURCE: Laboratory of Immunophamacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Science, Japan.
SOURCE: Bioscience, biotechnology, and biochemistry, (1999 Jan) Vol. 63, No. 1, pp. 104-10.
Journal code: 9205717. ISSN: 0916-8451.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199904
ENTRY DATE: Entered STN: 4 May 1999
Last Updated on STN: 4 May 1999
Entered Medline: 21 Apr 1999

AB It has been suggested that the immunopharmacological activity of soluble (1-->3)-beta-D-glucan depends on its conformation in mice. In this study, we examined the relationship between the conformation of Sonifilan (SPG) and hematopoietic responses in cyclophosphamide (Cy)-induced leukopenic mice. SPG, a high molecular weight (1-->3)-beta-D-glucan, has a triple helical conformation in water, and it was changed by treatment with aqueous sodium hydroxide to the single helical conformer (SPG-OH). The effects of SPG or SPG-OH on hematopoietic responses in cyclophosphamide induced leukopenic mice were investigated by monitoring i) gene expression of cytokines by RT-PCR, ii) protein synthesis of interleukin 6 (IL-6) by ELISA and iii) colony formation of bone marrow cells (BMC). The mice administered Cy and SPG or SPG-OH expressed and produced higher levels of IL-6 mRNA and protein than the mice administered only Cy. Gene expression of NK1.1 was also induced by Cy/SPG (or SPG-OH) treatment. Induced gene expression of

stem cell factor (SCF) and macrophage-colony stimulating factor (M-CSF) by SPG/SPG-OH were also found in in vitro culture of BMC from Cy treated mice. These results strongly suggested that conformation of the glucans, single and triple helix, are independent of the hematopietic response.

L4 ANSWER 16 OF 18 MEDLINE on STN
ACCESSION NUMBER: 1998368454 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9704756
TITLE: Measurement of (1-->3)-beta-D-glucan in an experimental model of systemic candidiasis.
AUTHOR: Kawagoe T; Nakao A; Kanbe T; Tamura H; Tanaka S; Takagi H
CORPORATE SOURCE: Department of Surgery II, Nagoya University School of Medicine, Japan.
SOURCE: European surgical research. Europaische chirurgische Forschung. Recherches chirurgicales europeennes, (1998) Vol. 30, No. 4, pp. 290-6.
Journal code: 0174752. ISSN: 0014-312X.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199810
ENTRY DATE: Entered STN: 21 Oct 1998
Last Updated on STN: 21 Oct 1998
Entered Medline: 15 Oct 1998
AB To investigate the utility of measuring blood concentrations of (1-->3)-beta-D-glucan, a component of the fungal cell wall, as an auxiliary diagnostic method for systemic candidiasis, rats were inoculated with Candida albicans and the number of C. albicans in the viscera and glucan in the blood were quantitated. The concentration of blood glucan and the number of C. albicans in the viscera were also measured both under leukopenia and with deteriorated reticuloendothelial system cell function, and when the liver and spleen had been excised. As a result, systemic candidiasis appeared in the group with leukopenia, and the number of living C. albicans increased in the kidney and liver. Together with this increase in the number of C. albicans, there was an increase in blood (1--> 3)-beta-D-glucan. Measurements of blood (1--> 3)-beta-D-glucan well reflect a proliferation of C. albicans in vivo, which would make this a useful auxiliary for the clinical diagnosis of systemic mycosis.

L4 ANSWER 17 OF 18 MEDLINE on STN
ACCESSION NUMBER: 97157906 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9004185
TITLE: Immunopharmacological activity of the purified insoluble glucan, zymocel, in mice.
AUTHOR: Suzuki T; Ohno N; Chiba N; Miura N N; Adachi Y; Yadomae T
CORPORATE SOURCE: Laboratory of Immunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Science, Japan.
SOURCE: The Journal of pharmacy and pharmacology, (1996 Dec) Vol. 48, No. 12, pp. 1243-8.
Journal code: 0376363. ISSN: 0022-3573.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199704
ENTRY DATE: Entered STN: 22 Apr 1997
Last Updated on STN: 22 Apr 1997
Entered Medline: 10 Apr 1997
AB Although it has been established that soluble glucan in fungi is important to host defence against infection, the importance of insoluble

glucans is not clear. We have examined the in-vivo immunopharmacological activity of the insoluble glucan, zymocel. Administration of zymocel increased peritoneal exudate cell number and spleen weight, and enhanced: phagocytic activity, hydrogen peroxide production, and nitric oxide production of peritoneal exudate cells; the extravascular release of Evans blue (which might reflect vascular permeability); lipopolysaccharide-triggered synthesis of tumour necrosis factor (TNF); and recovery of white blood cell number in cyclophosphamide-induced leukopenia. Zymocel also showed anti-tumour activity against sarcoma 180 in mice and also enhanced TNF synthesis and hydrogen peroxide production by macrophage-like cell line in-vitro, i.e. resulted in direct macrophage activation. These results show that zymocel shows varied immunopharmacological activity; it is suggested that the administration of insoluble glucan induces the inflammatory response, the subsequent activation of the immune systems via the cytokine network, and direct macrophage activation.

L4 ANSWER 18 OF 18 MEDLINE on STN
ACCESSION NUMBER: 96113615 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8845814
TITLE: Comparison of the immunopharmacological activities of triple and single-helical schizophyllan in mice.
AUTHOR: Ohno N; Miura N N; Chiba N; Adachi Y; Yadomae T
CORPORATE SOURCE: Laboratory of Immunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Science, Japan.
SOURCE: Biological & pharmaceutical bulletin, (1995 Sep) Vol. 18, No. 9, pp. 1242-7.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199610
ENTRY DATE: Entered STN: 6 Nov 1996
Last Updated on STN: 6 Nov 1996
Entered Medline: 23 Oct 1996

AB (1-->3)-beta-D-Glucans exhibit a variety of biological and immunopharmacological activities, and the significance of these activities is dependent on the structure of the glucans such as molecular weight, degree of branching, and conformation. Based on the generally accepted evidence that the conformation of clinically used Sonifilan (SPG) is a triple helix, we prepared alkaline treated SPG (SPG-OH) as a single helix conformer. In this report, we examined (A) the antitumor effect on a solid form tumor in vivo, (B) hematopoietic response on cyclophosphamide induced leukopenia, (C) antagonistic effect for zymosan mediated-hydrogen peroxide synthesis on peritoneal macrophage (PM), (D) priming effect of lipopolysaccharide (LPS) triggered tumor necrosis factor (TNF) synthesis, (E) nitric oxide synthesis of PM in vivo, and (F) hydrogen peroxide synthesis of PM in vivo. Both SPG and SPG-OH showed a significant effect on (A) and (B). The activity on (C) was stronger in SPG than SPG-OH. The activities of (D), (E), and (F) were stronger in SPG-OH. These facts strongly suggested that the glucan-mediated immunopharmacological activities were dependent on the helical conformation, and the conformation dependency varied dependent on the assays used.

L4 ANSWER 1 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:584227 CAPLUS
DOCUMENT NUMBER: 138:163148
TITLE: Effect of SCG, 1,3-β-D- glucan from Sparassis crispa on the hematopoietic response in cyclophosphamide induced leukopenia mice
AUTHOR(S): Harada, Toshie; Miura, Noriko; Adachi, Yoshiyuki; Nakajima, Mitsuhiro; Yadomae, Toshiro; Ohno, Naohito
CORPORATE SOURCE: Laboratory for Immunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Science, Tokyo, 192-0392, Japan
SOURCE: Biological & Pharmaceutical Bulletin (2002), 25(7), 931-939
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Sparassis crispa Fr. is an edible mushroom recently cultivable in Japan. It contains a remarkably high content of 6-branched 1,3-β-D-glucan showing antitumor activity. Using ion-exchange chromatog., a purified β- glucan preparation, SCG, was prepared In this study, we examined the hematopoietic response by SCG in cyclophosphamide (CY)-induced leukopenic mice. SCG enhanced the hematopoietic response in CY induced leukopenic mice by i.p. routes over a wide range of concns. SCG enhanced the hematopoietic response in CY-treated mice by prior or post administration. Analyzing the leukocyte population by flow cytometry, monocytes and granulocytes in the peritoneal cavity, liver, spleen and bone marrow (BM) recovered faster than in the control group. The ratio of natural killer cells and γδ T cells in the liver, spleen and peritoneal cavity was also increased. In contrast, CD4+ CD8+ cells in the thymus were temporarily significantly decreased by the administration of SCG. Interleukin-6 (IL-6) production of CY+SCG-treated peritoneal exdated cells (PECs), spleen cells and bone marrow cells (BMCs) were higher than that of the CY-treated group. By in vitro culture of CY-treated PEC and spleen cells, IL-6 production was enhanced by the addition of SCG. These facts suggested the possibility that IL-6 might be a key cytokine for the enhanced hematopoietic response by SCG.
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:543087 CAPLUS
DOCUMENT NUMBER: 138:100492
TITLE: Antitumor activity and hematopoietic response of a β-glucan extracted from an edible and medicinal mushroom Sparassis crispa wulf.: Fr. (aphyllophoromycetideae)
AUTHOR(S): Ohno, Naohito; Harada, Toshie; Masuzawa, Shinya; Miura, Noriko N.; Adachi, Yoshiyuki; Nakajima, Mitsuhiro; Yadomae, Toshiro
CORPORATE SOURCE: Laboratory for Immunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, Hachioji, Tokyo, 192-0392, Japan
SOURCE: International Journal of Medicinal Mushrooms (2002), 4(1), 13-26
CODEN: IMMUFR; ISSN: 1521-9437
PUBLISHER: Begell House, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Sparassis crispa Wulf.: Fr. is an edible and medicinal mushroom recently cultivated in Japan. It contains a high content (.apprx. 40%) of 6-branched 1,3-β-D- glucan showing antitumor activity. Oral

administration of the β- glucan fraction CA1, extracted with cold sodium hydroxide, enhanced the hematopoietic response in cyclophosphamide (CY)-induced leukopenic mice assessed by white blood cell count. Analyzing the leukocyte population by flow cytometry, the rate of leukocyte recovery in CY-administered mice was different in each population, such as granulocyte, monocyte, natural killer cell, B cell, T cell, and so on. Administration of CA1 modulated the recovery rate of each population. In Peyer's patches, recovery of the T/B ratio was faster than in the control group. In in vitro, CY-treated spleen cell culture, interleukin-6 and interferon-γ production was enhanced by CA1 treatment. These facts strongly suggested that the enhanced hematopoietic response by CA1 is due to enhanced cytokine production

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:618629 CAPLUS

DOCUMENT NUMBER: 133:275898

TITLE: Efficacy of the echinocandin caspofungin against disseminated aspergillosis and candidiasis in cyclophosphamide-induced immunosuppressed mice

AUTHOR(S): Abruzzo, George K.; Gill, Charles J.; Flattery, Amy M.; Kong, Li; Leighton, Claire; Smith, Jeffrey G.; Pikounis, V. Bill; Bartizal, Ken; Rosen, Hugh

CORPORATE SOURCE: Infectious Diseases, Merck Research Laboratories, Rahway, NJ, 07065-0900, USA

SOURCE: Antimicrobial Agents and Chemotherapy (2000), 44(9), 2310-2318
CODEN: AMACCQ; ISSN: 0066-4804

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The in vivo efficacy of the echinocandin antifungal caspofungin acetate (caspofungin; MK-0991) was evaluated in models of disseminated aspergillosis and candidiasis in mice with cyclophosphamide (CY)-induced immunosuppression. Caspofungin is a 1,3-β-D- glucan synthesis inhibitor efficacious against a number of clin. relevant fungi including Aspergillus and Candida species. Models of CY-induced transient or chronic leukopenia were used with once daily administration of therapy initiated 24 h after microbial challenge. Caspofungin was effective in treating disseminated aspergillosis in mice that were transiently leukopenic (significant prolongation of survival at doses of ≥0.125 mg/kg of body weight and a 50% protective dose [PD50] of 0.245 mg/kg/day at 28 days after challenge) or chronically leukopenic (50 to 100% survival at doses of ≥0.5 mg/kg and PD50s ranging from 0.173 to 0.400 mg/kg/day). Caspofungin was effective in the treatment and sterilization of Candida infections in mice with transient leukopenia with a 99% ED based on reduction in log10 CFU of Candida albicans/g of kidneys of 0.119 mg/kg and 80 to 100% of the caspofungin-treated mice having sterile kidneys at caspofungin doses from 0.25 to 2.0 mg/kg. In Candida-infected mice with chronic leukopenia, caspofungin was effective at all dose levels tested (0.25 to 1.0 mg/kg), with the log10 CFU of C. albicans/g of kidneys of caspofungin-treated mice being significantly lower (>99% reduction) than that of sham-treated mice from day 4 to day 28 after challenge. Also, 70 to 100% of the caspofungin-treated, chronic leukopenic mice had sterile kidneys at caspofungin doses of 0.5 to 1.0 mg/kg from day 8 to 28 after challenge. Sterilization of Candida infections by caspofungin in the absence of host leukocytes provides compelling in vivo evidence for fungicidal activity against C. albicans. Further human clin. trials with caspofungin against serious fungal infections are in progress.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:477462 CAPLUS
DOCUMENT NUMBER: 133:190267
TITLE: Antitumor 1,3-β-glucan from cultured fruit body of Sparassis crispa
AUTHOR(S): Ohno, Naohito; Miura, Noriko N.; Nakajima, Mitsuhiro; Yadomae, Toshiro
CORPORATE SOURCE: Laboratory of Immunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Science, Tokyo, 192-0392, Japan
SOURCE: Biological & Pharmaceutical Bulletin (2000), 23(7), 866-872
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Sparassis crispa is an edible mushroom recently cultivable in Japan. Polysaccharide fractions were prepared from the cultured S. crispa by repeated extraction with hot water (SCHWE), cold NaOH (SCCA), and then hot NaOH (SCHA). HWE was further separated by 1 volume (SCHWE1v) or 4 vols. (SCHWE4v) of ethanol-precipitable fractions. By chemical, enzymic, and NMR analyses, the primary structures of SCHWE1v, SCCA, and SCHA were 6-branched 1,3-β-glucan, having one branch in approx. every third main chain unit. All of these fractions showed antitumor activity to the solid form of Sarcoma 180 in ICR mice with strong vascular dilation and hemorrhage reaction. These fractions also showed enhanced hematopoietic response to cyclophosphamide induced leukopenic mice following i.p. or peroral administration.
REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:235041 CAPLUS
DOCUMENT NUMBER: 133:12504
TITLE: Immunopharmacological and immunotoxicological activities of a water-soluble (1 → 3)-β-D-glucan, CSBG from Candida spp
AUTHOR(S): Tokunaka, Kazuhiro; Ohno, Naohito; Adachi, Yoshiyuki; Tanaka, Shigenori; Tamura, Hiroshi; Yadomae, Toshiro
CORPORATE SOURCE: Laboratory for Immunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Science, Tokyo, 192-0392, Japan
SOURCE: International Journal of Immunopharmacology (2000), 22(5), 383-394
CODEN: IJIMDS; ISSN: 0192-0561
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have established a convenient, two-step procedure to solubilize the yeast cell wall (1→3)-β-D- glucan using the combination of NaClO oxidation and DMSO extraction Candida soluble β-D-glucan (CSBG) was mainly composed of a linear β-1,3 glucan with a linear β-1,6- glucan moiety. In this study, we screened for several immunopharmacol. activities of CSBG and found the following activities: (1) interleukin-6 synthesis of macrophages in vitro; (2) antagonistic effect for zymosan mediated-tumor necrosis factor synthesis of macrophages; (3) augmentation for lipopolysaccharide mediated tumor necrosis factor and nitrogen oxide syntheses of macrophages; (4) activation of alternative pathway of complement; (5) hematopoietic response on cyclophosphamide induced leukopenia; (6) the antitumor effect on ascites form tumor; (7) Enhanced vascular permeability; (8) priming effect on lipopolysaccharide triggered TNF-α synthesis; and (9) adjuvant effect on antibody production These

results strongly suggested that CSBG possessed various immunopharmacol. activity.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:104776 CAPLUS
DOCUMENT NUMBER: 130:306023
TITLE: Increase of hematopoietic responses by triple or single helical conformer of an antitumor (1→3)-β-D- glucan preparation, sonifilan, in cyclophosphamide-induced leukopenic mice
AUTHOR(S): Tsuzuki, Aiko; Tateishi, Tomoko; Ohno, Naohito; Adachi, Yoshiyuki; Yadomae, Toshiro
CORPORATE SOURCE: Laboratory of Immunophamacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Science, Tokyo, 192-0392, Japan
SOURCE: Bioscience, Biotechnology, and Biochemistry (1999), 63(1), 104-110
CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB It has been suggested that the immunopharmacol. activity of soluble (1→3)-β-D- glucan depends on its conformation in mice. In this study, we examined the relationship between the conformation of Sonifilan (SPG) and hematopoietic responses in cyclophosphamide (Cy)-induced leukopenic mice. SPG, a high mol. weight (1→3)-β-D- glucan, has a triple helical conformation in water, and it was changed by treatment with aqueous sodium hydroxide to the single helical conformer (SPG-OH). The effects of SPG or SPG-OH on hematopoietic responses in cyclophosphamide-induced leukopenic mice were investigated by monitoring i. gene expression of cytokines by RT-PCR, ii. protein synthesis of interleukin 6 (IL-6) by ELISA and iii. colony formation of bone marrow cells (BMC). The mice administered Cy and SPG or SPG-OH expressed and produced higher levels of IL-6 mRNA and protein than the mice administered only Cy. Gene expression of NK1.1 was also induced by Cy/SPG (or SPG-OH) treatment. Induced gene expression of stem cell factor (SCF) and macrophage-colony stimulating factor (M-CSF) by SPG/SPG-OH were also found in in vitro culture of BMC from Cy treated mice. These results strongly suggested that conformation of the glucans, single and triple helix, are independent of the hematopoietic response.
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:485646 CAPLUS
DOCUMENT NUMBER: 129:120947
TITLE: Measurement of (1→3)-β-D-glucan in an experimental model of systemic candidiasis
AUTHOR(S): Kawagoe, Takatsugu; Nakao, A.; Kanbe, T.; Tamura, H.; Tanaka, S.; Takagi, H.
CORPORATE SOURCE: Dep. Surgery II, School Medicine, Nagoya Univ., Nagoya, 466, Japan
SOURCE: European Surgical Research (1998), 30(4), 290-296
CODEN: EUSRBM; ISSN: 0014-312X
PUBLISHER: S. Karger AG
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To investigate the utility of measuring blood concns. of (1→3)-β-D- glucan as an auxiliary diagnostic method for systemic candidiasis rats were inoculated with Candida albicans and

the number of C. albicans in the viscera and glucan in the blood were quantitated. The concentration of blood glucan and the number of C. albicans in the viscera were also measured under leukopenia and with deteriorated reticuloendothelial system cell function, and when the liver and spleen were excised. Systemic candidiasis appeared in the group with leukopenia and the number of living C. albicans increased in the kidney and liver. Together with this increase in the number of C. albicans, there was an increase in blood (1→3)-β-D-glucan. Measurements of blood (1→3)-β-D-glucan well reflected a proliferation of C. albicans in vivo.

L4 ANSWER 8 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:75741 CAPLUS
DOCUMENT NUMBER: 126:139625
TITLE: Immunopharmacological activity of the purified insoluble glucan, zymocel, in mice
AUTHOR(S): Suzuki, Tatsuya; Ohno, Naohito; Chiba, Norihisa; Miura, Noriko N.; Adachi, Yoshiyuki; Yadomae, Toshiro
CORPORATE SOURCE: Laboratory of Immunopharmacology of Microbial Products, School of Pharmacy, Tokyo University of Pharmacy and Life Science, Hachioji, 192-03, Japan
SOURCE: Journal of Pharmacy and Pharmacology (1996), 48(12), 1243-1248
CODEN: JPPMAB; ISSN: 0022-3573
PUBLISHER: Royal Pharmaceutical Society of Great Britain
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Although it has been established that soluble glucan in fungi is important to host defense against infection, the importance of insol. glucans is not clear. We have examined the in-vivo immunopharmacol. activity of the insol. glucan, zymocel. Administration of zymocel increased peritoneal exudate cell number and spleen weight, and enhanced: phagocytic activity, hydrogen peroxide production, and nitric oxide production of peritoneal exudate cells; the extravascular release of Evans blue (which might reflect vascular permeability); lipopolysaccharide-triggered synthesis of tumor necrosis factor (TNF); and recovery of white blood cell number in cyclophosphamide-induced leukopenia. Zymocel also showed antitumor activity against sarcoma 180 in mice and also enhanced TNF synthesis and hydrogen peroxide production by macrophage-like cell line in-vitro, i.e. resulted in direct macrophage activation. These results show that zymocel shows varied immunopharmacol. activity; it is suggested that the administration of insol. glucan induces the inflammatory response, the subsequent activation of the immune systems via the cytokine network, and direct macrophage activation.

L5 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:259651 CAPLUS
DOCUMENT NUMBER: 142:291363
TITLE: Chemotherapeutic antineoplastic treatment
INVENTOR(S): Yvin, Jean-Claude; Vetvicka, Vaclav
PATENT ASSIGNEE(S): Fr.
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005065111	A1	20050324	US 2003-668661	20030923
WO 2005027938	A1	20050331	WO 2004-EP10993	20040916
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1663260	A1	20060607	EP 2004-787076	20040916
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				

PRIORITY APPLN. INFO.: US 2003-668661 A 20030923
WO 2004-EP10993 W 20040916

AB Chemotherapeutic method for the treatment of cancer comprising administration of an effective amount of an antineoplastic agent in conjunction with an effective amount of a β-1,3 glucan is disclosed.

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:157159 CAPLUS
DOCUMENT NUMBER: 132:344175
TITLE: Quantitative high-performance liquid chromatographic determination of acrolein in plasma after derivatization with Luminarin 3
AUTHOR(S): Paci, A.; Rieutord, A.; Guillaume, D.; Traore, F.; Ropenga, J.; Husson, H.-P.; Brion, F.
CORPORATE SOURCE: Service de Pharmacie-Toxico-Pharmacologie, Hopital Robert Debre, Paris, 75019, Fr.
SOURCE: Journal of Chromatography, B: Biomedical Sciences and Applications (2000), 739(2), 239-246
CODEN: JCBBEP; ISSN: 0378-4347
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A rapid, sensitive and specific high-performance liquid chromatog. method for the quantification of acrolein (1), one of the toxic metabolites of oxazaphosphorine alkylating agents (cyclophosphamide and ifosfamide) was developed. Condensation of acrolein with Luminarin 3 afforded a fluorescent derivative that could be specifically detected and quantified. Chromatog. conditions involved a C18 RP column Uptisphere and a gradient elution system to optimize resolution and time anal. The method showed high sensitivity with a limit of detection of 100 p mol/mL and a limit of quantification of 300 p mol/mL. This technique is particularly suitable for pharmacokinetic studies on plasma of oxazaphosphorine-receiving

patients.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:385442 CAPLUS

DOCUMENT NUMBER: 125:75581

TITLE: Effect of highly branched (1 → 3)-β-D-glucan, OL-2, on zymosan-mediated hydrogen peroxide production by murine peritoneal macrophages

AUTHOR(S): Chiba, Norihisa; Ohno, Naohito; Terui, Takayoshi; Adachi, Yoshiyuki; Yadomae, Toshiro

CORPORATE SOURCE: Lab. Immunopharmacol. Microbial Products, School Pharmacy, Tokyo Univ. Pharmacy Life Sci., Tokyo, 192-03, Japan

SOURCE: Pharmaceutical and Pharmacological Letters (1996), 6(1), 12-15
CODEN: PPLEE3; ISSN: 0939-9488

PUBLISHER: Medpharm Scientific Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Degree of branching is an important contributing factor to define immunopharmacol. activity of (1→6)-branched (1→3)-β-D-glucans. OL-2 is a highly branched (1→3)-β-D-glucan showing low antitumor activity and high hematopoietic activity. In this paper, we examined effect of OL-2 on zymosan, a particulate β-glucan, mediated H2O2 production by murine peritoneal macrophages (PEM) and compared the activity with other glucans. We used the scopoletin fluorescence assay to measure production of H2O2. The glucans used were laminarin (linear), SPG (branched, degree of branching is 1/3), GRN (branched, 1/3), SSG (branched, 1/2), and OL-2 (branched, 2/3). Pretreatment of proteose peptone elicited PEM with OL-2 for 6 h at 37° inhibited the subsequent zymosan-mediated H2O2 production similar to others. Macrophages elicited by i.p. administration of soluble β-glucans increased zymosan-mediated H2O2 production compared with control group, but the strength of the effect was different among glucans (OL-2 > SSG > GRN). Similar results were observed all the strains of ICR, BALB/c, C3H/HeN, AKR. Antitumor activity of β-glucan was high in the former two strains. These facts strongly suggested that the structure-activity relation of the glucan induced H2O2 production was not strongly correlated with that of antitumor activity.

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:385442 CAPLUS
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AUTHOR(S): Chiba, Norihisa; Ohno, Naohito; Terui, Takayoshi; Adachi, Yoshiyuki; Yadomae, Toshiro
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L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

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SOURCE: Pharmaceutical and Pharmacological Letters (1996), 6(1), 12-15
CODEN: PPLEE3; ISSN: 0939-9488

PUBLISHER: Medpharm Scientific Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

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L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:385442 CAPLUS
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CORPORATE SOURCE: Lab. Immunopharmacol. Microbial Products, School Pharmacy, Tokyo Univ. Pharmacy Life Sci., Tokyo, 192-03, Japan
SOURCE: Pharmaceutical and Pharmacological Letters (1996), 6(1), 12-15
CODEN: PPLEE3; ISSN: 0939-9488
PUBLISHER: Medpharm Scientific Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
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     (FILE 'HOME' ENTERED AT 13:22:49 ON 06 DEC 2006)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 13:22:58 ON 06 DEC 2006
L1             1 S LAMINARIN? (P) LEUKOPEN?
L2            24 S ?GLUCAN (P) LEUKOPEN?
L3             6 S ?GLUCAN (P) LEUKOPEN? (P) CANCER?
L4            18 S L2 NOT L3
L5             2 S LAMINARIN? (P) CYCLOPHOSPHAMIDE
L6             1 S LAMINARIN? (P) HEMATOPOIETIC
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     (FILE 'HOME' ENTERED AT 13:22:49 ON 06 DEC 2006)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 13:22:58 ON 06 DEC 2006
L1             1 S LAMINARIN? (P) LEUKOPEN?
L2            24 S ?GLUCAN (P) LEUKOPEN?
L3             6 S ?GLUCAN (P) LEUKOPEN? (P) CANCER?
L4            18 S L2 NOT L3
L5             2 S LAMINARIN? (P) CYCLOPHOSPHAMIDE
L6             1 S LAMINARIN? (P) HEMATOPOIETIC
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L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:4274 CAPLUS
DOCUMENT NUMBER: 110:4274
TITLE: Isolation of protoplasts from the cellulolytic fungus Trichoderma viride QM 9414
AUTHOR(S): Nutsubidze, N. N.; Prabakaran, K.; Dzhafarova, A. N.; Klesov, A. A.
CORPORATE SOURCE: A. N. Bakh Inst. Biochem., Moscow, USSR
SOURCE: Prikladnaya Biokhimiya i Mikrobiologiya (1988), 24(5), 725-9
CODEN: PBMIAK; ISSN: 0555-1099
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Protoplasts from T. viride QM 9414 were isolated by using a specially prepared multienzyme complex containing endoglucanase, cellobiase, chitinase, RNase, laminarinase, xylanase, and protease. Optimal conditions for isolation of protoplasts from the 20-h-old mycelium are: incubation with the lysing mixture at 30° for 4 h in phosphate buffer (0.05M pH 6.5). Half the protoplasts released were able to regenerate the cell wall. The protoplasts were stable for 24 h at room temperature and for 6 days at 4°.

L2 ANSWER 1 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:14722 CAPLUS
DOCUMENT NUMBER: 144:327875
TITLE: Defense and resistance-inducing activities in tobacco of the sulfated β-1,3 glucan PS3 and its synergistic activities with the unsulfated molecule
AUTHOR(S): Menard, Rozenn; de Ruffray, Patrice; Fritig, Bernard; Yvin, Jean-Claude; Kauffmann, Serge
CORPORATE SOURCE: Institut de Biologie Moleculaire des Plantes du CNRS, Universite Louis Pasteur, Strasbourg, 67084, Fr.
SOURCE: Plant and Cell Physiology (2005), 46(12), 1964-1972
CODEN: PCPHA5; ISSN: 0032-0781
PUBLISHER: Japanese Society of Plant Physiologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Laminarin, a β-1,3 glucan with single β-glucose branches at position 6, was chemical sulfated to produce PS3 with a degree of sulfation of 2.4. PS3 has previously been shown to activate the salicylic acid (SA) signaling pathway in infiltrated tobacco and Arabidopsis thaliana leaf tissues. Here, we investigated whether PS3 induces systemic defense and resistance responses in tobacco. Using a radiolabeled compound, it was first demonstrated that PS3 remains strictly localized to the infiltrated tissues. PS3 is also resistant to β-glucanase degradation In transgenic PR1-β-glucuronidase (GUS) tobacco plants, PS3 causes a strong increase in GUS activity in treated tissues but none in untreated leaves. PS3-infiltrated tissues challenged with tobacco mosaic virus (TMV) 8 days after elicitor application show a decrease in both the lesion number and the lesion size, whereas treatment with laminarin, the unsulfated native glucan, affected only the lesion number PS3 does not induce systemic acquired resistance to TMV. PS3 and laminarin show synergistic effects in promoting the oxidative burst in tobacco cell suspensions and in increasing the expression of genes encoding O-methyltransferases of the phenylpropanoid pathway in tobacco plants. No synergistic effect was observed on the expression of either the SA-dependent acidic PR1 gene or the ethylene-dependent basic PR5 gene in tobacco plants.
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:951529 CAPLUS
DOCUMENT NUMBER: 142:274746
TITLE: Yeast Saccharomyces cerevisiae as a tool in cloning and analysis of fungal genes: applications for biomass hydrolysis and utilization
AUTHOR(S): Saloheimo, Anu
CORPORATE SOURCE: VTT Biotechnology, Faculty of Biosciences, Department of Biological and Environmental Sciences, Division of Genetics, University of Helsinki, Helsinki, Finland
SOURCE: VTT Publications (2004), 541, 1-84, I/1-I/10, II/1-II/9, III/1-III/6, IV/1-IV/27
CODEN: VTTPEY; ISSN: 1235-0621
PUBLISHER: Valtion Teknillinen Tutkimuskeskus
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The baker's yeast, Saccharomyces cerevisiae has been employed by man for centuries in manufacturing of bread, beer, and wine. In science, it has become a useful tool as well. In this work, methods were developed in order to study the mol. biol. of the cellulolytic filamentous fungus Trichoderma reesei with the aid of yeast. Cellulose is the most abundant carbon source in nature, and its enzymic degradation is essential for carbon turnover. In addition, cellulose is used as a raw material in microbial processes. In this work, a previously unknown

cellulase-encoding gene was cloned by expression in yeast and detection of hydrolysis halos on substrate plates. This EGV enzyme consists of an exceptionally small core domain, a cellulose -binding domain, and a linker region connecting the two. EGV belongs to family GH45 of glycosyl hydrolases. Addnl., a gene encoding a β-1,3-1,4-glucanase enzyme was cloned and studied. The enzyme was produced in insect cells, and anal. of the degradation products of β-glucan by NMR showed that it was a laminarinase (EC 3.2.1.6). A yeast-based cloning method for pos. acting regulatory proteins was set up, and two regulatory genes of the T. reesei cellulases, ace1 and ace2, were isolated. The isolation was based on the ability of the encoded proteins to activate expression of a reporter gene, which was linked to the full-length promoter of the major cellulase gene cbh1 in yeast. No homologs of the new regulatory proteins were detected outside the Mycota. The DNA-binding properties of the regulatory proteins were studied both in vitro and in vivo in yeast. Deletion of the ace1 gene resulted in slower radial growth of the fungus on cellulose-containing plates. However, although isolated as an activator, ACEI was later shown to act as a repressor of hydrolase expression. ACEII, on the other hand, was shown to be an activator of cellulase expression. However, it is certainly not the only one, since its deletion did not result in a cellulase -neg. phenotype. Addnl., a sugar permease-encoding gene was isolated from T. reesei by complementation. The yeast strain used as a host was deleted for the major hexose transporter genes (hxt1-7, gal2), and addnl. engineered for xylose utilization. The T. reesei permease complemented the growth defect of the mutant strain on xylose-maltose medium. However, adaptive mutation(s) were needed in the host to enable growth on xylose of the permease-expressing strain. The same, engineered yeast strain was used as a host for the native S. cerevisiae hexose transporter genes HXT1, HXT2, HXT4 and HXT7, and the kinetics of xylose transport were studied. The affinities of the permeases for xylose varied, Km values of 190-900 mM were detected. Interesting differences were obtained in the levels of inhibition by the presence of glucose. The single-Hxt strains exhibited a biphasic growth mode on xylose media, where an initially very slow growth was followed by exponential growth after a lag of several days.

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 3 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:250922 CAPLUS

DOCUMENT NUMBER: 141:85630

TITLE: Cell wall hydrolases in the seeds of Euphorbia heterophylla L. during germination and early seedling development

AUTHOR(S): Suda, Cecilia N. K.; Buckeridge, Marcos S.; Giorgini, Jarbas F.

CORPORATE SOURCE: Departamento de Bioquimica e Imunologia, Faculdade de Medicina de Ribeirao Preto, Universidade de Sao Paulo, Ribeirao Preto, CEP 14049-900, Brazil

SOURCE: Brazilian Journal of Plant Physiology (2003), 15(3), 135-143
CODEN: BJPPBR; ISSN: 1677-0420

PUBLISHER: Brazilian Society of Plant Physiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Activities of cell wall hydrolases of Euphorbia heterophylla L. (wild poinsettia) endosperm were investigated during pre- and post-emergence periods, defined as the time interval before and after 2.2 days from the start of imbibition, resp. The activities of endo-β-mannanase and β-mannosidase are higher over the pre-emergence when compared to the post-emergence period and they may be involved in the process of germination in E. heterophylla. On the other hand, the activities of β-galactosidase, β-glucosidase,

α-xylosidase, β-xylosidase and glucanases which hydrolyze CMC, xyloglucans from Hymenaea courbaril or Copaifera langsdorffii, xylan, Avicel and lichenan, are higher over the post-emergence period. Activity on laminarin occurs over both periods. The activity of xyloglucanases was promoted in the presence of oligosaccharide XXLG. E. heterophylla endosperm surrounds the embryo and their cotyledons, which increases in area after 1 day from the start of imbibition. Rather than the mobilization of cell wall reserves the activity of hydrolases over the post-emergence period may be related to facilitation of cotyledon expansion by lowering endosperm resistance. The fraction of water-soluble polysaccharides extracted from the seed coat is composed of mannose (15.9%), galactose (20.5 %), and glucose (63.6 %) whereas the fraction from decoated seed is composed of glucose (11.0 %), galactose (36.9 %) and xylose (47.9 %).

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 4 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:369773 CAPLUS
DOCUMENT NUMBER: 137:90687
TITLE: Spacer-elongated cell wall fusion proteins improve cell surface expression in the yeast Saccharomyces cerevisiae
AUTHOR(S): Breinig, F.; Schmitt, M. J.
CORPORATE SOURCE: Angewandte Molekularbiologie, Universitat des Saarlandes, Saarbrucken, 66041, Germany
SOURCE: Applied Microbiology and Biotechnology (2002), 58(5), 637-644
CODEN: AMBIDG; ISSN: 0175-7598
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Fusion proteins for cell surface expression in the yeast Saccharomyces cerevisiae were constructed that consisted of the N-terminal leader sequence of Kre1p, followed by the nine amino acid viral epitope hemagglutinin (HA), and the carboxyterminal anchoring domain of either Cwp2p or Flo1p. All fusions were constitutively expressed under transcriptional control of the phosphoglycerate kinase promoter and immunofluorescence anal. indicated that in each construct the HA peptide was correctly anchored to the outer yeast cell surface. Successful solubilization of the cell wall fusions by laminarinase treatment indicated that the fusions are covalently linked to cell wall β-1,3-D-glucans in vivo. FACS analyses further demonstrated that 70% of the yeast cell population expressed the corresponding cell wall fusion. Neither the number of pos. cells within the population nor the distribution of the fusion at the single-cell level were neg. affected by replacing the "heterologous" Kre1p leader by the "native" Cwp2p leader. Insertion of a 350 amino acid Ser/Thr-rich spacer sequence into the fusions led to a dramatic increase in HA peptide accessibility on the yeast cell surface. The data show that FACS analyses represent a valuable means for investigating cell surface expression, and indicate that artificial-spacer-elongated cell wall fusions might raise novel possibilities for cell surface expression of heterologous proteins in yeast.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:670403 CAPLUS
DOCUMENT NUMBER: 134:2831
TITLE: In vitro production of superoxide and nitric oxide (as nitrite and nitrate) by Mytilus galloprovincialis hemocytes upon incubation with PMA or laminarin or

during yeast phagocytosis
AUTHOR(S): Arumugam, Munusamy; Romestand, Bernard; Torreilles, Jean; Roch, Philippe
CORPORATE SOURCE: Department of Zoology, Chennai, India
SOURCE: European Journal of Cell Biology (2000), 79(7), 513-519
CODEN: EJCBDN; ISSN: 0171-9335
PUBLISHER: Urban & Fischer Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The phagocytic process is one of the most important elements of the self-defense system in mammals as well as in mollusks. In mammalian phagocytes, superoxide participates in the innate defense system by combining with nitric oxide to generate peroxynitrite, a strong oxidant that possesses highly cytotoxic properties against bacteria. To evidence a role of nitric oxide in the self-defense system of the marine bivalve Mytilus galloprovincialis similar to the role observed in the mammalian defense system, the authors measured the generation of superoxide and nitrite/nitrate (the stable end products of nitric oxide) upon in vitro stimulation of M. galloprovincialis hemocytes with PMA, laminarin , LPS and by phagocytosis of Saccharomyces cerevisiae (yeast cells). The authors show that stimulation with PMA, laminarin and yeast cell phagocytosis promotes superoxide and nitrite/nitrate generation from M. galloprovincialis hemocytes. Inhibitors of NADPH oxidase and inhibitors of NO synthase decreased the nitrite/nitrate levels generated by M. galloprovincialis hemocytes showing that both NADPH oxidase and NO synthase pathways are involved in the self-defense system of M. galloprovincialis.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 6 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:393213 CAPLUS
DOCUMENT NUMBER: 129:118465
TITLE: Construction and properties of a deletion variant of the laminarinase (LamA) from Thermotoga neapolitana and expression of the modified gene in protoplasts of Nicotiana plumbaginifolia
AUTHOR(S): Velikodvorskaya, T. V.; Volkov, I. Yu.; Vasilevko, V. T.; Zverlov, V. V.; Volkova, L. V.; Belsabane, Kh. Alizade; Chekanovskaya, L. V.; Piruzian, E. S.
CORPORATE SOURCE: Inst. Mol. Genet., Russ. Acad. Sci., Moscow, 123182, Russia
SOURCE: Russian Journal of Genetics (Translation of Genetika (Moscow)) (1998), 34(5), 489-492
CODEN: RJGEEQ; ISSN: 1022-7954
PUBLISHER: MAIK Nauka/Interperiodica Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Some properties of the deletion derivative of the gene encoding the β-1,3-glucanase (laminarinase) from extremely thermophilic bacteria Thermotoga neapolitana were studied. A high specific activity of the enzyme under normal conditions of plant growth was revealed. A hybrid gene containing the signal sequence of the carrot extensin gene and deletion derivative of the lamA L4 under control of the constitutive TR2' promoter was transferred into plant cells. The functional activity of the carrot extensin gene signal sequence and the possibility of the detection of thermostable bacterial glucanase against the background of nonthermostable plant glucanases were shown.
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 7 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:82267 CAPLUS

DOCUMENT NUMBER: 128:213881
TITLE: Engineering yeast for efficient cellulose degradation
AUTHOR(S): Van Rensburg, Pierre; Van Zyl, Willem H.; Pretorius, Isak S.
CORPORATE SOURCE: Dep. Microbiol., Inst. Wine Biotechnol.; Univ. Stellenbosch, Stellenbosch, S. Afr.
SOURCE: Yeast (1998), 14(1), 67-76
CODEN: YESTE3; ISSN: 0749-503X
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Saccharomyces cerevisiae produces several β-1,3-glucanases, but lacks the multicomponent cellulase complexes that hydrolyze the β-1,4-linked glucose polymers present in cellulose-rich biomass as well as in haze-forming glucans in certain wines and beers. We have introduced into S. cerevisiae a functional cellulase complex for efficient cellulose degradation by cloning the Endomyces fibuliger cellobiase (BGL1) gene and co-expressing it with the Butyrivibrio fibrisolvens endo-β-1,4-glucanase (END1), the Phanerochaete chrysosporium cellobiohydrolase (CBH1) and the Ruminococcus flavefaciens cellodextrinase (CEL1) gene constructs in the yeast. The END1, CBH1 and CEL1 genes were inserted into yeast expression/secretion cassettes. Expression of END1, CBH1 nd CEL1 was directed by the promoter sequences derived from the alc. dehydrogenase II (ADH2), the phosphoglycerate kinase I (PKG1) and the alc. dehydrogenase I (ADH1) genes, resp. In contrast, BGL1 was expressed under the control of its native promoter. Secretion of End1p and Ce11p was directed by the signal sequence of the yeast mating pheromone a-factor (MFFα1), whereas Cbh1p and Bg11p were secreted using their authentic leader peptides. The construction of a fur1 ura3 S. cerevisiae strain allowed for the autoselection of this multicopy URA3-based plasmid in rich medium. S. cerevisiae transformants secreting biol. active endo-β-1,4-glucanase, cellobiohydrolase, cellodextrinase and cellobiase were able to degrade various substrates including CM-cellulose, hydroxyethylcellulose, laminarin, barely glucan, cellobiose, polypectate, birchwood xylan and methyl-β-D-glucopyranoside. This study could lead to the development of industrial strains of S. cerevisiae capable of converting cellulose in a one-step process into com. important commodities.

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 8 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:187260 CAPLUS
DOCUMENT NUMBER: 120:187260
TITLE: Are ethylene and 1-aminocyclopropane-1-carboxylic acid involved in the induction of chitinase and β-1,3-glucanase activity in sunflower cell-suspension cultures?
AUTHOR(S): Siefert, Frank; Langebartels, Christian; Boller, Thomas; Grossmann, Klaus
CORPORATE SOURCE: Landwirtschaftliche Versuchsstn., BASF, Limburgerhof, D-67114, Germany
SOURCE: Planta (1994), 192(3), 431-40
CODEN: PLANAB; ISSN: 0032-0935
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Auxin-dependent, heterotrophic suspension cells of sunflower (Helianthus annuus L. C.K. Spanners All-zweck) showed, on a cell -protein basis, a seven-fold increase in chitinase activity, which began 5 d after treatment with 10-5 mol·L-1 of the triazole-type growth retardant BAS 111..W. In proportion to this increase, chitinase activity appeared to be excreted into the culture medium. The intracellular

activity of β-1,3-glucanase, assayed fluorimetrically with laminarin as the substrate, was only slightly enhanced. Dose-response expts. with BAS 111..W showed that the onset of the induction of chitinase activity coincided with an inhibition of ethylene formation and an accumulation of endogenous 1-aminocyclopropane-1-carboxylic acid (ACC) as a result of blocking the conversion of ACC to ethylene. Other nitrogen-heterocyclic growth retardants (e.g. tetcyclacis, ancymidol), the triazole-type fungicide BAS 480..F, salicylic acid, CoCl2 and 2,4-D, which also increased the ACC/ethylene ratio, similarly induced chitinase activity. In contrast, aminoethoxy vinylglycine, which simultaneously lowered endogenous ACC and ethylene formation, did not stimulate chitinase activity. However, after addition of BAS 111..W and ACC, an accumulation of endogenous ACC was accompanied by a strong induction of the enzymic activity. This effect did not correlate with changes in the cell culture growth nor in the cellular contents of immunoreactive abscisic acid, IAA, gibberellins or cytokinins. Furthermore, ethephon, which chemical generates ethylene, led to a slight reduction in ACC levels and tended to decrease chitinase activity relative to the control. Thus, the induction of chitinase activity in sunflower cell suspensions is antagonistically regulated by ethylene and ACC. At least at higher production rates, ethylene appears to function as an inhibiting factor whereas ACC may be a promoting one. The stimulation of chitinase and β-1,3-glucanase activity, caused by the retardant BAS 111..W and the fungicide BS 480..F, is discussed as an addnl. effect of both compds. which possibly leads to an increased resistance of plants to fungal infections.

L2 ANSWER 9 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:129737 CAPLUS
DOCUMENT NUMBER: 120:129737
TITLE: Nucellar callus of 'Femminello' lemon, selected for tolerance to Phoma tracheiphila toxin, shows enhanced release of chitinase and glucanase into the culture medium
AUTHOR(S): Gentile, A.; Tribulato, E.; Deng, Z. N.; Galun, E.; Fluhr, R.; Vardi, A.
CORPORATE SOURCE: Ist. Coltiv. Arboree, Univ. Catania, Catania, 95123, Italy
SOURCE: Theoretical and Applied Genetics (1993), 86(5), 527-32
CODEN: THAGA6; ISSN: 0040-5752
DOCUMENT TYPE: Journal
LANGUAGE: English
AB P. tracheiphila is the causative agent of the disease mal secco. Citrus cultivars differ substantially in respect to their sensitivity to the pathogen P. tracheiphila and its toxin. Some cultivars (e.g., Femminello lemon) are inherently sensitive while others (e.g., Tarocco orange) are tolerant. Cell lines derived from nucellar tissue of Femminello, Tarocco and a cell line selected for tolerance to the fungal toxin (Femminello-S) were used to study host-pathogen interaction. The authors' results showed that calli or conditioned media of Tarocco and Femminello-S inhibited the size of co-cultivated fungal colonies when compared to Femminello. In addition, conditioned medium of Tarocco as well as Femminello-S, but not Femminello, promoted bursting of hyphal tips. A ten-fold increase in chitinase and glucanase enzymic activity, as evaluated by radiometric assay and laminarin hydrolysis resp., was detected in Femminello-S extracellular exts. as compared to Femminello. An increase in chitinase was also shown by immunoblot anal. The authors' findings suggest a pos. correlation between the presence of chitinase and glucanase in the conditioned media of the cultured cells and the tolerance of those cells to P. tracheiphila toxin.

L2 ANSWER 10 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:104277 CAPLUS
DOCUMENT NUMBER: 116:104277
TITLE: Influence of yeasts and of their constituents on nucleoside uptake in peritoneal murine macrophages
AUTHOR(S): Busolo, Franco; Palu, Giorgio; Conventi, Luciano
CORPORATE SOURCE: Fac. Med., Padua Univ., Padua, 35121, Italy
SOURCE: FEMS Microbiology Letters (1991), 90(1), 5-9
CODEN: FMLED7; ISSN: 0378-1097
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A marked reduction of [3H]-uridine uptake was observed when mouse peritoneal macrophages (pM.vphi.) were exposed to heat-killed Candida albicans or Saccharomyces cerevisiae. By contrast, an increased nucleoside uptake was promoted by yeast products such as zymosan, laminarin, or yeast cell-wall exts., which are mainly composed of β-glucans and α-mannans. In a search for the active fungal component(s), the uptake process was shown to be differently affected by monosaccharides and polysaccharides. These findings support the view that a specific recognition of a pM.vphi. membrane receptor is mediating the effect of the various substances.

L2 ANSWER 11 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:158405 CAPLUS
DOCUMENT NUMBER: 114:158405
TITLE: Sequencing and expression of a cellodextrinase (ced1) gene from Butyrivibrio fibrisolvens H17c cloned in Escherichia coli
AUTHOR(S): Berger, Eldie; Jones, Winsome A.; Jones, David T.; Woods, David R.
CORPORATE SOURCE: Dep. Microbiol., Univ. Cape Town, Rondebosch, 7700, S. Afr.
SOURCE: Molecular and General Genetics (1990), 223(2), 310-18
CODEN: MGGEAE; ISSN: 0026-8925
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The nucleotide sequence of a 2.314 kb DNA segment containing a gene (ced1) expressing cellodextrinase activity from B. fibrisolvens H17c was determined The B. fibrisolvens H17c gene was expressed from a weak internal promoter in E. coli and a putative consensus promoter sequence was identified upstream of a ribosome binding site and GTG start codon. The complete amino acid sequence (547 residues) was deduced and homol. was demonstrated with the Clostridium thermocellum endoglucanase D (EGD), Pseudomonas fluorescens var. cellulosa endoglucanase (EG), and a cellulase from the avocado fruit (Persea americana). The ced1 gene product Ced1 showed cellodextrinase activity and rapidly hydrolyzed short-chain cellodextrins to yield either cellobiose or cellobiose and glucose as end products. The Ced1 enzyme released cellobiose from p-nitrophenyl-β-D- cellobioside and the enzyme was not inhibited by methylcellulose, an inhibitor of endoglucanase activity. Although the major activity of the Ced1 enzyme was that of a cellodextrinase it also showed limited activity against endoglucanase specific substrates [CM-cellulose (CMC), lichenan, laminarin, and xylan]. Anal. by SDS-polyacrylamide gel electrophoresis with incorporated CMC showed a major activity band with an apparent Mr of approx. 61,000. The calculated Mr of the ced1 gene product was 61,023.

L2 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:403513 CAPLUS
DOCUMENT NUMBER: 113:3513
TITLE: The 76 kD cell-adhesion factor from crayfish hemocytes promotes encapsulation in vitro
AUTHOR(S): Kobayashi, Mutsuo; Johansson, Mats W.; Soederhaell,

Kenneth
CORPORATE SOURCE: Dep. Physiol. Bot., Univ. Uppsala, Uppsala, S-75121, Swed.
SOURCE: Cell & Tissue Research (1990), 260(1), 13-18
CODEN: CTSRCS; ISSN: 0302-766X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Semigranular cells from the crayfish, Pacifastacus leniusculus, were separated by Percoll gradient centrifugation and were used to study the encapsulation of foreign particles. The semigranular cells strongly encapsulated glass beads coated with hemocyte lysate in which the prophenoloxidase-activating system had been activated with laminarin or with a low concentration of Ca2+. The granular cells only weakly encapsulated these particles. The encapsulation-promoting factor was purified from hemocyte lysates and found to be a 76-kilodalton (kD) protein which was recognized by an antiserum to the previously described 76-kD cell-adhesion factor. After the last step in purification (Con A-Sepharose chromatog.), the flowthrough consisted of several proteins, which had some, but less, encapsulation-promoting activity and contained a 30-kD band that was also recognized by the antiserum to the 76 kD cell-adhesion factor. If the hemocyte lysate prepared in a low Ca2+ concentration was incubated with a β-1,3-glucan prior to purification, no 76-kD protein could be isolated but only a 30-kD protein. The 30-kD protein thus seems to be a degradation product of the 76-kD cell-adhesion factor. Apparently, the 76-kD protein which is released from degranulating hemocytes, and to a lesser extent its 30-kD fragment, can promote encapsulation. Phenoloxidase did not have any encapsulation-promoting activity.

L2 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:466355 CAPLUS
DOCUMENT NUMBER: 109:66355
TITLE: Preparation, analysis and biological activities of laminarin and laminarin sulfate
AUTHOR(S): Fan, Manfang; Chen, Qionghua
CORPORATE SOURCE: Div. Biochem., China Pharm. Univ., Nanjing, Peop. Rep. China
SOURCE: Zhongguo Yaoke Daxue Xuebao (1988), 19(1), 30-4
CODEN: ZHYXE9; ISSN: 1000-5048
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Laminarin (I) and I sulfate were obtained from Luminaria japonica. These two polysaccharides contained 60.4 and 31.1% sugar, resp., without protein and nucleic acid. Mol. wts. were 40,000 and 80,000 resp. The acute LD50 of the two polysaccharides by i.p. injection in mice were 980 and 689 mg/kg, resp. I and I sulfate enhanced the phagocytosis of macrophage and increased the content of hemolysin in serum of the sensitized mice. They stimulated lymphocyte transformation. In addition, I caused red cell agglutination. The two polysaccharides showed a remarkable antagonistic action to leukopenia, while I also had a remarkable antiradiation effect. The two polysaccharides decreased the concentration of cholesterol in serum. I sulfate was capable of delaying fibrin clotting time and thrombinogen time. It promoted solution of euglobulin of rabbits in vivo. Nevertheless, I showed much less remarkable effects.

L2 ANSWER 14 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1980:464333 CAPLUS
DOCUMENT NUMBER: 93:64333
TITLE: 1,3-β-D-Glucanases from Pisum sativum seedlings. III. Development and distribution of endogenous substrates
AUTHOR(S): Wong, Yuk-Shan; Maclachlan, Gordon A.
CORPORATE SOURCE: Biol. Dep., McGill Univ., Montreal, QC, H3A 1B1, Can.
SOURCE: Plant Physiology (1980), 65(2), 222-8
CODEN: PLPHAY; ISSN: 0032-0889
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Two endo-1,3-β-D-glucanases (I and II, E.C. 3.2.1.6) were present in etiolated peas at opposite ends of the stem. Glucanase I from subapical regions degraded substrates to a series of low-mol.-weight dextrins, and was most readily assayed reductometrically (e.g. as laminarinase). Glucanase II from basal regions preferentially hydrolyzed internal linkages of long chains, and was most sensitively assayed viscometrically (e.g. as carboxymethylpachymanase). The activity of glucanase II, but not I, increased greatly near the apex in response to treatment of the tissue with auxin, and ethylene gas suppressed endogenous activities and the auxin response; i.e., levels of the these enzymes are under developmental controls which can be regulated. Different natural substrates for the 2 enzymes were identified in tissue fractions soluble in hot water. Substrates for glucanase I were concentrated in apical regions, as was the enzyme itself, and those for glucanase II were in basal regions, implying that enzymes and substrates are normally in sep. cellular compartments. Tissue sections stained with aniline blue for β-glucan show enhanced fluorescence in cell walls, and most of this was removed either by hot water or the appropriate purified β-glucanase. The enzymes are not likely to function directly in promoting nutrition or growth in peas, but they could help, following secretion, to maintain channels for communication and translocation through cell walls.

L2 ANSWER 15 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1980:421420 CAPLUS
DOCUMENT NUMBER: 93:21420
TITLE: Lyticase: endoglucanase and protease activities that act together in yeast cell lysis
AUTHOR(S): Scott, Janet H.; Schekman, Randy
CORPORATE SOURCE: Biochem. Dep., Univ. California, Berkeley, CA, 94720, USA
SOURCE: Journal of Bacteriology (1980), 142(2), 414-23
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Yeast cell-lytic activity was purified from the culture supernatant of Oerskovia xanthineolytica grown on minimal medium with insol. yeast glucan as the C source. The lytic activity consisted of 2 synergistic enzyme activities which copurified on CM-cellulose and Sephadex G-150, but were resolved on Bio-Gel P-150. The 1st component was a β-1,3-glucanase with a mol. weight of 55,000. The Km for yeast glucan was 0.4 mg/mL; that for laminarin was 5.9 mg/mL. Hydrolysis of β-1,3-glucans was endolytic, yielding a mixture of products ranging from glucose to oligomers of ≥10 units. The size distribution of products was pH dependent, smaller oligomers predominating at the lower pH. The glucanase was unable to lyse yeast cells without 2-mercaptoethanol or the 2nd lytic component, an alkaline protease. Neither of these agents had any effect on the glucanase activity on polysaccharide substrates. The protease had a mol. weight of 30,000 and hydrolyzed Azocoll and a variety of denatured proteins. The enzyme was unusual in that it had an affinity for Sephadex. Although the activity was insensitive to most protease inhibitors, it was affected by

polysaccharides; yeast mannan was a potent inhibitor. The enzyme did not have any mannanase activity. Neither Pronase nor trypsin could substitute for this protease in promoting yeast cell lysis. A partially purified fraction of the enzymes, easily obtained with a single purification step, had a high lytic specific activity and was superior to com. prepns. with regard to nuclease, protease, and chitinase contamination. Lyticase was applied in spheroplast, membrane, and nucleic acid isolation, and proved useful in yeast transformation procedures.

L2 ANSWER 16 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:68198 CAPLUS
DOCUMENT NUMBER: 86:68198
TITLE: Production and catabolite repression of Penicillium italicum β-glucanases
AUTHOR(S): Santos, Tomas; Villanueva, Julio R.; Nombela, Cesar
CORPORATE SOURCE: Fac. Sci., Univ. Salamanca, Salamanca, Spain
SOURCE: Journal of Bacteriology (1977), 129(1), 52-8
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The filamentous fungus P. italicum, grown in a defined liquid medium, produced β-1,3-glucanase, which remained essentially bound to the cells, and β-1,6-glucanase, an essentially extracellular enzyme. When glucose was depleted from the medium, when a limited concentration of glucose (0.2%) was maintained, or when the C source was galactose (3%) or lactose (3%), a significant increase in the sp. activity of β-1,3-glucanase in cell exts. took place. This was paralleled by a very slow rate of growth, and under glucose limitation, the appearance of β-1,3-glucanase in the medium was also observed On the other hand, when an excess of glucose, fructose, or sucrose was present, the sp. activity remained constant and active growth was promoted. Laminarin, cellobiose, gentiobiose, and isolated P. italicum walls did not significantly induce β-1,3-glucanase synthesis to a level beyond that attained by glucose limitation. A similar behavior was observed for β-1,6-glucanase. β-1,3-Glucanase and β-1,6-glucanase are therefore constitutive enzymes subjected to catabolite repression. The results are discussed in the context of the possible functions that have been suggested for glucanases and related enzymes.

L2 ANSWER 17 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:424853 CAPLUS
DOCUMENT NUMBER: 83:24853
TITLE: Production of yeast lytic enzymes by a strain belonging to the genus Oerskovia. II. Culture conditions for the production of yeast lytic enzymes from Oerskovia species CK and some properties of the crude enzymes
AUTHOR(S): Obata, Takaji; Yamashita, Koichi; Nunokawa, Yataro
CORPORATE SOURCE: Natl. Res. Inst. Brew., Tokyo, Japan
SOURCE: Hakko Kogaku Zasshi (1975), 53(5), 256-63
CODEN: HKZAA2; ISSN: 0367-5963
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB The culture filtrate of the CK strain of Oerskovia, exhibited high lytic activity toward logarithmic or stationary phase cells of many species of yeast, when the yeast cells were used as substrate. Culturing conditions of the CK strain giving the optimum production of the cell wall lytic enzyme were investigated. It was found that glucan, the main component of yeast cell wall, and laminarin whose structure is similar to glucan, were effective induces of enzyme production Addition of $NaNO_3$, KNO_3, or $(NH_4)_2HPO_4$ to the medium promoted the enzyme production, owing to maintenance of the

broth pH around neutrality. The enzyme production was also enhanced when the medium was sterilized at pH 11.0 and readjusted to pH 7.0. This enzyme preparation showed β-1,3-glucanase, β-1,6-glucanase, mannanase, protease and amylase activities. Optimum pH and temperature of the lytic activity were 6.0-9.0 and 30-40°, resp. This lytic activity was stable at pH 6.0-10.0, but was completely lost on treatment at 50° for 15 min. The activity was also severely inhibited by 10-4M HgCl2.

L2 ANSWER 18 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1974:446724 CAPLUS
DOCUMENT NUMBER: 81:46724
TITLE: Fungal enzymes active in hydrolyzing yeast cell wall. I. Production, purification, crystallization, and some properties of yeast cell lytic enzyme from a species of Fungi Imperfecti
AUTHOR(S): Yamamoto, Shimpei; Fukuyama, Juichi; Nagasaki, Susumu
CORPORATE SOURCE: Fac. Agric., Kochi Univ., Kochi, Japan
SOURCE: Agricultural and Biological Chemistry (1974), 38(2), 329-37
CODEN: ABCHA6; ISSN: 0002-1369
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An enzyme (mol. weight 24,500) which degrades yeast glucan and yeast cells in the logarithmic phase of growth was crystallized from the culture filtrate of Fungi Imperfecti. The enzyme catalyzed the hydrolysis of laminarin, pachyman, and yeast glucan to produce a mixture of laminaridextrins. The conversion of yeast cells in the logarithmic phase of growth to protoplasts by the enzyme was promoted by addition of mercaptoethanol or phosphomannanase.

L2 ANSWER 19 OF 26 MEDLINE on STN
ACCESSION NUMBER: 2005694388 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16215271
TITLE: Defense and resistance-inducing activities in tobacco of the sulfated beta-1,3 glucan PS3 and its synergistic activities with the unsulfated molecule.
AUTHOR: Menard Rozenn; de Ruffray Patrice; Fritig Bernard; Yvin Jean-Claude; Kauffmann Serge
CORPORATE SOURCE: Institut de Biologie Moleculaire des Plantes du CNRS, Universite Louis Pasteur, 12 rue du General Zimmer, 67084 Strasbourg, France.
SOURCE: Plant & cell physiology, (2005 Dec) Vol. 46, No. 12, pp. 1964-72. Electronic Publication: 2005-10-08.
Journal code: 9430925. ISSN: 0032-0781.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200602
ENTRY DATE: Entered STN: 30 Dec 2005
Last Updated on STN: 1 Mar 2006
Entered Medline: 28 Feb 2006
AB Laminarin, a beta-1,3 glucan with single beta-glucose branches at position 6, was chemically sulfated to produce PS3 with a degree of sulfation of 2.4. PS3 has previously been shown to activate the salicylic acid (SA) signaling pathway in infiltrated tobacco and Arabidopsis thaliana leaf tissues. Here, we investigated whether PS3 induces systemic defense and resistance responses in tobacco. Using a radiolabeled compound, it was first demonstrated that PS3 remains strictly localized to the infiltrated tissues. PS3 is also resistant to beta-glucanase degradation. In transgenic PR1-beta-glucuronidase (GUS) tobacco plants, PS3 causes a strong increase in GUS activity in treated tissues but none in untreated leaves. PS3-infiltrated tissues challenged with tobacco mosaic virus (TMV) 8 d after elicitor application show a decrease in both

the lesion number and the lesion size, whereas treatment with laminarin, the unsulfated native glucan, affected only the lesion number. PS3 does not induce systemic acquired resistance to TMV. PS3 and laminarin show synergistic effects in promoting the oxidative burst in tobacco cell suspensions and in increasing the expression of genes encoding O-methyltransferases of the phenylpropanoid pathway in tobacco plants. No synergistic effect was observed on the expression of either the SA-dependent acidic PR1 gene or the ethylene-dependent basic PR5 gene in tobacco plants.

L2 ANSWER 20 OF 26 MEDLINE on STN
ACCESSION NUMBER: 2002219044 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11956747
TITLE: Spacer-elongated cell wall fusion proteins improve cell surface expression in the yeast Saccharomyces cerevisiae.
AUTHOR: Breinig F; Schmitt M J
CORPORATE SOURCE: Angewandte Molekularbiologie, Universitat des Saarlandes, Gebaude 2, Postfach 151150, 66041 Saarbrucken, Germany.
SOURCE: Applied microbiology and biotechnology, (2002 Apr) Vol. 58, No. 5, pp. 637-44. Electronic Publication: 2002-02-12. Journal code: 8406612. ISSN: 0175-7598.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 17 Apr 2002
Last Updated on STN: 5 Jan 2003
Entered Medline: 9 Aug 2002

AB Fusion proteins for cell surface expression in the yeast Saccharomyces cerevisiae were constructed that consisted of the N-terminal leader sequence of Kre1p, followed by the nine amino acid viral epitope hemagglutinin (HA), and the carboxyterminal anchoring domain of either Cwp2p or Flo1p. All fusions were constitutively expressed under transcriptional control of the phosphoglycerate kinase promoter and immunofluorescence analysis indicated that in each construct the HA peptide was correctly anchored to the outer yeast cell surface. Successful solubilization of the cell wall fusions by laminarinase treatment indicated that the fusions are covalently linked to cell wall beta-1,3- D-glucans in vivo. FACS analyses further demonstrated that 70% of the yeast cell population expressed the corresponding cell wall fusion. Neither the number of positive cells within the population nor the distribution of the fusion at the single-cell level were negatively affected by replacing the "heterologous" Kre1p leader by the "native" Cwp2p leader. Insertion of a 350 amino acid Ser/Thr-rich spacer sequence into the fusions led to a dramatic increase in HA peptide accessibility on the yeast cell surface. Our data show that FACS analyses represent a valuable means for investigating cell surface expression, and indicate that artificial-spacer-elongated cell wall fusions might raise novel possibilities for cell surface expression of heterologous proteins in yeast.

L2 ANSWER 21 OF 26 MEDLINE on STN
ACCESSION NUMBER: 2001077142 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10961451
TITLE: In vitro production of superoxide and nitric oxide (as nitrite and nitrate) by Mytilus galloprovincialis haemocytes upon incubation with PMA or laminarin or during yeast phagocytosis.
AUTHOR: Arumugam M; Romestand B; Torreilles J; Roch P
CORPORATE SOURCE: Department of Zoology, Chennai/India.
SOURCE: European journal of cell biology, (2000 Jul) Vol. 79, No. 7, pp. 513-9.

Journal code: 7906240. ISSN: 0171-9335.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 22 Mar 2001
Last Updated on STN: 22 Mar 2001
Entered Medline: 11 Jan 2001

AB The phagocytic process is one of the most important elements of the self-defence system in mammals as well as in molluscs. In mammalian phagocytes, superoxide participates in the innate defence system by combining with nitric oxide to generate peroxynitrite, a strong oxidant that possesses highly cytotoxic properties against bacteria. To evidence a role of nitric oxide in the self-defence system of the marine bivalve Mytilus galloprovincialis similar to the role observed in the mammalian defence system, we measured the generation of superoxide and nitrite/nitrate (the stable end products of nitric oxide) upon in vitro stimulation of M. galloprovincialis haemocytes with PMA, laminarin , LPS and by phagocytosis of Saccharomyces cerevisiae (yeast cells). We show that stimulation with PMA, laminarin and yeast cell phagocytosis promotes superoxide and nitrite/nitrate generation from M. galloprovincialis haemocytes. Inhibitors of NADPH oxidase and inhibitors of NO synthase decreased the nitrite/nitrate levels generated by M. galloprovincialis haemocytes showing that both NADPH oxidase and NO synthase pathways are involved in the self-defence system of M. galloprovincialis.

L2 ANSWER 22 OF 26 MEDLINE on STN
ACCESSION NUMBER: 1998144790 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9483796
TITLE: Engineering yeast for efficient cellulose degradation.
AUTHOR: Van Rensburg P; Van Zyl W H; Pretorius I S
CORPORATE SOURCE: Institute for Wine Biotechnology, University of Stellenbosch, South Africa.
SOURCE: Yeast (Chichester, England), (1998 Jan 15) Vol. 14, No. 1, pp. 67-76.
Journal code: 8607637. ISSN: 0749-503X.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199803
ENTRY DATE: Entered STN: 7 Apr 1998
Last Updated on STN: 7 Apr 1998
Entered Medline: 24 Mar 1998

AB Saccharomyces cerevisiae produces several beta-1,3-glucanases, but lacks the multicomponent cellulase complexes that hydrolyse the beta-1,4-linked glucose polymers present in cellulose-rich biomass as well as in haze-forming glucans in certain wines and beers. We have introduced into S. cerevisiae a functional cellulase complex for efficient cellulose degradation by cloning the Endomyces fibuliger cellobiase (BGL1) gene and co-expressing it with the Butyrivibrio fibrisolvens endo-beta-1,4-glucanase (END1), the Phanerochaete chrysosporium cellobiohydrolase (CBH1) and the Ruminococcus flavefacies cellodextrinase (CEL1) gene constructs in this yeast. The END1, CBH1 and CEL1 genes were inserted into yeast expression/secretion cassettes. Expression of END1, CBH1 and CEL1 was directed by the promoter sequences derived from the alcohol dehydrogenase II (ADH2), the phosphoglycerate kinase I (PKG1) and the alcohol dehydrogenase I (ADH1) genes, respectively. In contrast, BGL1 was expressed under the control of its native promoter. Secretion of End1p and Cel1p was directed by the signal sequence of the yeast mating pheromone alpha-factor (MF alpha 1), whereas Cbh1p and Bgl1p were secreted

using their authentic leader peptides. The construction of a fur1 ura3 S. cerevisiae strain allowed for the autoselection of this multicopy URA3-based plasmid in rich medium. S. cerevisiae transformants secreting biologically active endo-beta-1,4-glucanase, cellobiohydrolase, cellodextrinase and cellobiase were able to degrade various substrates including carboxymethylcellulose, hydroxyethylcellulose, laminarin, barley glucan, cellobiose, polypectate, birchwood xylan and methyl-beta-D-glucopyranoside. This study could lead to the development of industrial strains of S. cerevisiae capable of converting cellulose in a one-step process into commercially important commodities.

L2 ANSWER 23 OF 26 MEDLINE on STN
ACCESSION NUMBER: 92146918 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1783283
TITLE: Influence of yeasts and of their constituents on nucleoside uptake in peritoneal murine macrophages.
AUTHOR: Busolo F; Palu G; Conventi L
CORPORATE SOURCE: Institute of Microbiology, Padua University, Faculty of Medicine, Italy.
SOURCE: FEMS microbiology letters, (1991 Dec 15) Vol. 69, No. 1, pp. 5-9.
Journal code: 7705721. ISSN: 0378-1097.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199203
ENTRY DATE: Entered STN: 5 Apr 1992
Last Updated on STN: 3 Feb 1997
Entered Medline: 16 Mar 1992

AB A marked reduction of [3H]-uridine uptake was observed when mouse peritoneal macrophages (pM phi) were exposed to heat-killed Candida albicans or Saccharomyces cerevisiae. By contrast, an increased nucleoside uptake was promoted by yeast products such as zymosan, laminarin, or yeast cell-wall extracts, which are mainly composed of beta-glucans and alpha-mannans. In a search for the active fungal component(s), the uptake process was shown to be differently affected by monosaccharides and polysaccharides. These findings support the view that a specific recognition of a pM phi membrane receptor is mediating the effect of the various substances.

L2 ANSWER 24 OF 26 MEDLINE on STN
ACCESSION NUMBER: 91066844 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2250655
TITLE: Sequencing and expression of a cellodextrinase (ced1) gene from Butyrivibrio fibrisolvens H17c cloned in Escherichia coli.
AUTHOR: Berger E; Jones W A; Jones D T; Woods D R
CORPORATE SOURCE: Department of Microbiology, University of Cape Town, Rondebosch, South Africa.
SOURCE: Molecular & general genetics : MGG, (1990 Sep) Vol. 223, No. 2, pp. 310-8.
Journal code: 0125036. ISSN: 0026-8925.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-X55732
ENTRY MONTH: 199101
ENTRY DATE: Entered STN: 8 Mar 1991
Last Updated on STN: 8 Mar 1991
Entered Medline: 17 Jan 1991

AB The nucleotide sequence of a 2.314 kb DNA segment containing a gene (ced1)

expressing cellodextrinase activity from Butyrivibrio fibrisolvens H17c was determined. The B. fibrisolvens H17c gene was expressed from a weak internal promoter in Escherichia coli and a putative consensus promoter sequence was identified upstream of a ribosome binding site and a GTG start codon. The complete amino acid sequence (547 residues) was deduced and homology was demonstrated with the Clostridium thermocellum endoglucanase D (EGD), Pseudomonas fluorescens var. cellulosa endoglucanase (EG), and a cellulase from the avocado fruit (Persea americana). The ced1 gene product Ced1 showed cellodextrinase activity and rapidly hydrolysed short-chain cellodextrins to yield either cellobiose or cellobiose and glucose as end products. The Ced1 enzyme released cellobiose from p-nitrophenyl-beta-D-cellobioside and the enzyme was not inhibited by methylcellulose, an inhibitor of endoglucanase activity. Although the major activity of the Ced1 enzyme was that of a cellodextrinase it also showed limited activity against endoglucanase specific substrates [carboxymethylcellulose (CMC), lichenan, laminarin and xylan]. Analysis by SDS-polyacrylamide gel electrophoresis with incorporated CMC showed a major activity band with an apparent Mr of approximately 61,000. The calculated Mr of the ced1 gene product was 61,023.

L2 ANSWER 25 OF 26 MEDLINE on STN
ACCESSION NUMBER: 83008998 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6126520
TITLE: Phenotypic resistance to amphotericin B in Candida albicans: relationship to glucan metabolism.
AUTHOR: Notario V; Gale E F; Kerridge D; Wayman F
SOURCE: Journal of general microbiology, (1982 Apr) Vol. 128, No. 4, pp. 761-77.
Journal code: 0375371. ISSN: 0022-1287.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198212
ENTRY DATE: Entered STN: 17 Mar 1990
Last Updated on STN: 6 Feb 1995
Entered Medline: 2 Dec 1982

AB The phenotypic resistance to amphotericin methyl ester (AME) of stationary phase cultures of Candida albicans was decreased by alkaline pH values and by treatment with 2-mercaptoethanol or glucanase preparations, and was increased by acid pH values, increased aeration, treatment with N-ethylmaleimide, or the presence of inhibitors of protein synthesis such as trichodermin. The effects of such treatments on endogenous glucanase activity and on the incorporation of glucose residues into the 'glucan fraction' of the organism were studied. The changes in the endogenous levels of lytic activities on laminarin [as a measure of the total (1 leads to 3)-beta-D-glucanase] and on p-nitrophenyl-beta-D-glucoside [reflecting the exo-(1 leads to 3)-beta-D-glucanase] were followed in C. albicans cells under a variety of conditions. Treatments which increased AME sensitivity stimulated both total and exo-(1 leads to 3)-beta-D-glucanase activities, while treatments which promoted resistance decreased the levels of both (1 leads to 3)-beta-D-glucanases. Changes in the 'glucan fraction' were followed by incubating suspensions of organisms in the presence of trace amounts of [U-14C]glucose. The rate of incorporation of radioactivity fell during the first 2-3 d of stationary phase culture and then rose to high values by 7-8 d; AME resistance increased throughout this period. The rate of incorporation was markedly stimulated by prior treatment of the organisms with 2-mercaptoethanol or glucanase and inhibited by trichodermin or treatment with N-ethylmaleimide. The addition in the concentration range 0.3-3 mM of the glucose analogues beta-D-allose, 3-O-methyl-D-glucose, 2-deoxy-D-glucose or 5-thio-D-glucose to cultures 24 h after inoculation

prevented any further increase in AME resistance for the next 2-3 d and resulted in a decrease in the level of resistance established at the time of addition. Radioactivity from 14C- or 3H-labelled analogues added, 24 h after inoculation, to stationary phase cultures was incorporated into the 'glucan fraction' of the organisms. The incorporation of glucose residues into the 'glucan fraction' is controlled by the activity of glucanases in producing glucose acceptor sites. The results reported confirm that there is a correlation between glucan metabolism, glucanase activity and resistance to AME, in that any factor leading to increased glucanase action also results in decreased resistance and vice versa, while incorporation of certain glucose analogues into the 'glucan fraction' delays the further increase in resistance.

L2 ANSWER 26 OF 26 MEDLINE on STN
ACCESSION NUMBER: 77071313 MEDLINE
DOCUMENT NUMBER: PubMed ID: 830646
TITLE: Production and catabolite repression of Penicillium italicum beta-glucanases.
AUTHOR: Santos T; Villanueva J R; Nombela C
SOURCE: Journal of bacteriology, (1977 Jan) Vol. 129, No. 1, pp. 52-8.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197702
ENTRY DATE: Entered STN: 13 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 26 Feb 1977

AB The filamentous fungus Penicillium italicum, grown in a defined liquid medium, produced beta-1,3-glucanase, which remained essentially bound to the cells, and beta-1,6-glucanase, an essentially extracellular enzyme. When glucose was depleted from the medium, when a limited concentration of glucose (0.2%) was maintained, or when the carbon source was galactose (3%) or lactose (3%), a significant increase in the specific activity of beta-1,3-glucanase, in cell extracts, took place. This was paralleled by a very slow rate of growth, and under glucose limitation, the appearance of beta-1,3-glucanase in the medium was also observed. On the other hand, when an excess of glucose, fructose, or sucrose was present, the specific activity remained constant and active growth was promoted. Laminarin, cellobiose, gentiobiose, and isolated Penicillium italicum walls were not capable of significantly inducing beta-1,3-glucanase synthesis to a level beyond that attained by glucose limitation. A similar behavior was observed for beta-1,6-glucanase. beta-1,3-Glucanase and beta-1,6-glucanase are therefore constitutive enzymes subjected to catabolite repression. The results are discussed in the context of the possible functions that have been suggested for glucanases and related enzymes.

L13 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:330135 CAPLUS
DOCUMENT NUMBER: 143:53051
TITLE: Structure of β-glucan oligomer from laminarin and its effect on human monocytes to inhibit the proliferation of U937 cells
AUTHOR(S): Pang, Zhongcun; Otaka, Kodo; Maoka, Takashi; Hidaka, Kumi; Ishijima, Sumio; Oda, Masayuki; Ohnishi, Masatake
CORPORATE SOURCE: Graduate School of Agriculture, Kyoto Prefectural University, Kyoto, 606-8522, Japan
SOURCE: Bioscience, Biotechnology, and Biochemistry (2005), 69(3), 553-558
CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We analyzed the human monocyte-stimulating ability of laminarin from Eisenia bicyclis, lichenan from Cetraria islandica, and their oligomers depolymd. with endo-1,3-β-glucanase from Arthrobacter sp. The resp. β-glucan oligomers with different ds.p. (DP) were fractionated from hydrolytic products of laminarin and lichenan using gel-filtration chromatog. The monocyte-conditioned medium pre-cultured in the presence of a fraction of β-glucan oligomer (DP ≥ 8) from laminarin exhibited inhibitory activity against the proliferation of human myeloid leukemia U937 cells, while those pre-cultured with other β-glucan oligomers and the original laminarin and lichenan showed little or no activity. NMR anal. indicated that the β-glucan oligomer (DP ≥ 8) has an average DP value of 13, and its ratio of β-1,3- to β-1,6-linkages in glucopyranose units was estimated to be 1.3:1. These results indicate that the β-1,3-glucan oligomer with a higher content of β-1,6-linkage stimulates monocytes to inhibit the proliferation of U937 cells.
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:321189 CAPLUS
DOCUMENT NUMBER: 139:51655
TITLE: Induction of TNF-α production from human peripheral blood monocytes with β-1,3-glucan oligomer prepared from laminarin with β-1,3-glucanase from Bacillus clausii NM-1
AUTHOR(S): Miyanishi, Nobumitsu; Iwamoto, Yoshiko; Watanabe, Etsuo; Oda, Tatsuya
CORPORATE SOURCE: Department of Food Science and Technology, Tokyo University of Fisheries, Tokyo, 108-8477, Japan
SOURCE: Journal of Bioscience and Bioengineering (2003), 95(2), 192-195
CODEN: JBBIF6; ISSN: 1389-1723
PUBLISHER: Society for Bioscience and Bioengineering, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We prepared a β-1,3-glucan oligomer (DP≥4) from laminarin (DP: 25-30) derived from Laminaria digitata with β-1,3-glucanase, and examined its effect on human peripheral blood monocytes. Conditioned medium prepared by incubating monocytes (MC-CM) with the β-1,3-glucan oligomer showed strong inhibitory activity against the proliferation of human leukemic U937 cells. Since the β-1,3-glucan oligomer had no direct cytotoxic effect on U937 cells up to 1000 μg/mL, the cytotoxicity of the MC-CM may be due to cytotoxic cytokines produced from monocytes stimulated by the β-1,3-glucan

oligomer. On the other hand, the MC-CM prepared with original laminarin had little effect on the growth of U937 cells. The cytotoxicity of the MC-CM prepared with the β-1,3-glucan oligomer was significantly reduced by an anti-TNF-α antibody, but the anti-TNF-β antibody had no effect. Our results suggest that the enzymically depolymd. β-1,3-glucan oligomer induces TNF-α production from human monocytes.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:547811 CAPLUS
DOCUMENT NUMBER: 113:147811
TITLE: Inhibition of retroviral reverse transcriptases by commercial polysaccharide preparations
AUTHOR(S): Kato, Jun; Isahai, Yoshitaka; Hada, Hideo; Ogawa, Masahiro; Oishi, Kunio; Yamaki, Hiroshi
CORPORATE SOURCE: Coll. Agric. Vet. Med., Nihon Univ., Tokyo, 154, Japan
SOURCE: Nihon Daigaku Nojuigakubu Gijutsu Kenkyu Hokoku (1990), (47), 81-3
CODEN: NIPDAD; ISSN: 0078-0839
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB Retroviral reverse transcriptase (RTase)-inhibitory activity in com. polysaccharide prepns. (21 samples) was investigated. Dextran sulfate showed complete and potent inhibitions to RTases of Rous virus-2 (RAV-2) and Moloney mouse leukemia virus (M-MuLV), resp. λ-Carrageenan and laminarin showed efficient inhibition and heparan sulfate and Na alginate showed weak inhibition to both the enzymes. Dextran was inhibitory to RTase of RAV-2. RTase of M-MuLV was more sensitive to polysaccharides than that of RAV-2.

L13 ANSWER 4 OF 5 MEDLINE on STN
ACCESSION NUMBER: 2005557696 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16233391
TITLE: Induction of TNF-alpha production from human peripheral blood monocytes with beta-1,3-glucan oligomer prepared from laminarin with beta-1,3-glucanase from Bacillus clausii NM-1.
AUTHOR: Miyanishi Nobumitsu; Iwamoto Yoshiko; Watanabe Etsuo; Odaz Tatsuya
CORPORATE SOURCE: Department of Food Science and Technology, Tokyo University of Fisheries, 4-5-7 Konan, Minato-ku, Tokyo 108-8477, Japan.
SOURCE: Journal of bioscience and bioengineering, (2003) Vol. 95, No. 2, pp. 192-5.
Journal code: 100888800. ISSN: 1389-1723.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; PUBMED-NOT-MEDLINE
ENTRY MONTH: 200511
ENTRY DATE: Entered STN: 20 Oct 2005
Last Updated on STN: 9 Nov 2005
Entered Medline: 8 Nov 2005

AB We prepared a beta-1,3-glucan oligomer (DP> or = 4) from laminarin (DP: 25-30) derived from Laminaria digitata with beta-1,3-glucanase, and examined its effect on human peripheral blood monocytes. Conditioned medium prepared by incubating monocytes (MC-CM) with the beta-1,3-glucan oligomer showed strong inhibitory activity against the proliferation of human leukemic U937 cells. Since the beta-1,3-glucan oligomer had no direct cytotoxic effect on U937 cells up to 1000 microg/ml, the cytotoxicity of the MC-CM may be due to cytotoxic cytokines produced from monocytes stimulated by the beta-1,3-glucan oligomer. On the other hand,

the MC-CM prepared with original laminarin had little effect on the growth of U937 cells. The cytotoxicity of the MC-CM prepared with the beta-1,3-glucan oligomer was significantly reduced by an anti-TNF-alpha antibody, but the anti-TNF-beta antibody had no effect. Our results suggest that the enzymatically depolymerized beta-1,3-glucan oligomer induces TNF-alpha production from human monocytes.

L13 ANSWER 5 OF 5 MEDLINE on STN
ACCESSION NUMBER: 2005151355 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15784984
TITLE: Structure of beta-glucan oligomer from laminarin and its effect on human monocytes to inhibit the proliferation of U937 cells.
AUTHOR: Pang Zhongcun; Otaka Kodo; Maoka Takashi; Hidaka Kumi; Ishijima Sumio; Oda Masayuki; Ohnishi Masatake
CORPORATE SOURCE: Graduate School of Agriculture, Kyoto Prefectural University, Japan.
SOURCE: Bioscience, biotechnology, and biochemistry, (2005 Mar) Vol. 69, No. 3, pp. 553-8.
Journal code: 9205717. ISSN: 0916-8451.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200509
ENTRY DATE: Entered STN: 24 Mar 2005
Last Updated on STN: 20 Sep 2005
Entered Medline: 19 Sep 2005

AB We analyzed the human monocyte-stimulating ability of laminarin from Eisenia bicyclis, lichenan from Cetraria islandica, and their oligomers depolymerized with endo-1,3-beta-glucanase from Arthrobacter sp. The respective beta-glucan oligomers with different degrees of polymerization (DP) were fractionated from hydrolytic products of laminarin and lichenan using gel-filtration chromatography. The monocyte-conditioned medium pre-cultured in the presence of a fraction of beta-glucan oligomer (DP>/=8) from laminarin exhibited inhibitory activity against the proliferation of human myeloid leukemia U937 cells, while those pre-cultured with other beta-glucan oligomers and the original laminarin and lichenan showed little or no activity. NMR analysis indicated that the beta-glucan oligomer (DP>/=8) has an average DP value of 13, and its ratio of beta-1,3- to beta-1,6-linkages in glucopyranose units was estimated to be 1.3:1. These results indicate that the beta-1,3-glucan oligomer with a higher content of beta-1,6-linkage stimulates monocytes to inhibit the proliferation of U937 cells.

L16 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:947522 CAPLUS
DOCUMENT NUMBER: 145:269738
TITLE: Differential infection of mononuclear phagocytes by Francisella tularensis: role of the macrophage mannose receptor
AUTHOR(S): Schulert, Grant S.; Allen, Lee-Ann H.
CORPORATE SOURCE: Inflammation Program, University of Iowa and the VA Medical Center, Iowa City, USA
SOURCE: Journal of Leukocyte Biology (2006), 80(3), 563-571
CODEN: JLBIE7; ISSN: 0741-5400
PUBLISHER: Federation of American Societies for Experimental Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Francisella tularensis (Ft) is a Gram-neg. bacterium and the causative agent of tularemia. It is well established that this organism replicates inside macrophages, but the authors are only beginning to understand this interface at the mol. level. Herein, the authors compared directly the ability of Ft subspecies holarctica live-vaccine strain to infect freshly isolated human peripheral blood monocytes, monocyte-derived macrophages (MDM), and cells of the murine macrophage cell line J774A.1 (J774). The authors now show that unopsonized bacteria infected human MDM fivefold more efficiently than monocytes or J774 cells in standard media. Moreover, enhanced infection of MDM was mediated, in part, by the macrophage mannose receptor (MR). Forming Ft phagosomes accumulated MR, and infection was inhibited by MR-blocking antibody or soluble mannan but not by the dectin-1 ligand laminarin . Up-regulation of MR in MDM (by exposure to interleukin-4) increased Ft phagocytosis, as did expression of MR in J774 cells. Conversely, opsonized Ft were ingested readily by monocytes and MDM. Medium supplementation with 2.5% fresh autologous serum was sufficient to confer opsonophagocytosis and CD11b accumulated in the membrane at sites of Ft engulfment. Infection of monocytes by opsonized Ft was nearly ablated by complement receptor 3 (CR3) blockade. Conversely, MDM used MR and CD11b/CD18 to ingest opsonized organisms. Altogether, the authors' data demonstrate differential infection of mononuclear phagocytes by Ft and define distinct roles for MR and CR3 in phagocytosis.
REFERENCE COUNT: 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:394530 CAPLUS
DOCUMENT NUMBER: 142:423818
TITLE: Therapeutical combination against cancer comprising a monoclonal antibody with a glucan
INVENTOR(S): Yvin, Jean-Claude; Panak, Edouard; Vetvicka, Vaclav
PATENT ASSIGNEE(S): Laboratoire Goemar SA, Fr.
SOURCE: U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005095250	A1	20050505	US 2003-698034	20031030
US 7070778	B2	20060704		
WO 2005049044	A1	20050602	WO 2004-EP13119	20041029

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG

EP 1684770 A1 20060802 EP 2004-791108 20041029
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK

PRIORITY APPLN. INFO.: US 2003-698034 A 20031030
WO 2004-EP13119 W 20041029

AB The present invention relates to compns. and methods for treating humans and warm-blood animals suffering from cancer. More particularly, a therapeutical treatment in which a monoclonal antibody is administered with either β-(1,3)-glucan like laminarin or an oligo-β-(1,3)-glucan and a pharmaceutically acceptable carrier, to patients suffering from cancer are described. Female nude mice were implanted s.c. with human breast carcinoma cell line. Mice were injected i.p. with combination of Phycarine 500 mg/kg, once a day for 5 days and Herceptin 0.5 mg/kg, twice a week during 3 wk. The combined administration of Phycarine and Herceptin allowed a limitation in the increase of the tumor weight which was far higher than the mean value obtained when administering Herceptin or Phycarine alone; said activity on the tumor weight being even equivalent to the one obtained when administering a conventional dosage of taxol.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:875883 CAPLUS
DOCUMENT NUMBER: 136:177471
TITLE: Comparative immunomodulating activity of marine origin bioglycans
AUTHOR(S): Zaporozhets, T. S.; Besednova, N. N.; Molchanova, V. N.; Zvyagintseva, T. N.
CORPORATE SOURCE: NII Epidemiol. i Mikrobiol., SO RAMN, Vladivostok, 690087, Russia
SOURCE: Antibiotiki i Khimioterapiya (2001), 46(7), 6-10
CODEN: ANKHEW; ISSN: 0235-2990
PUBLISHER: Izdatel'skii Dom "Krasnaya Ploshchad"
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB Immunomodulating activity of three marine bioglycanes of different structure was investigated. The following prepns. were compared: mitilan, a glycoprotein, containing 1,4-α-D-glucane, isolated from mussel Crenomytilus grayanus, translam, a beta-1,3;1,6-β-D-glucane isolated from Laminarin cichorioides and zosterin, a low-methoxylated pectin isolated from marine plant of genera Zosteraceae. It was shown that the modulation of the immune response was due to delicate and complex interaction of immune competent cells with cytokine participation. All bioglycanes investigated, when introduced into animal organism, produced changes in the immune system: spleen mass enlarged, lymphocytes subpopulation redistributed, nonspecific T-suppressors activity enhanced, content of interferon in blood serum increased. It is considered that similarity of immune system reactions is due to polysaccharide component of investigated biopolymers and the potency of the effect is determined by structural specificity and by stereochem. of each bioglycine.

L16 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:594816 CAPLUS

DOCUMENT NUMBER: 103:194816
TITLE: The role of prophenoloxidase activation in non-self recognition and phagocytosis by insect blood cells
AUTHOR(S): Leonard, Catherine; Ratcliffe, Norman A.; Rowley, Andrew F.
CORPORATE SOURCE: Dep. Zool., Univ. Coll. Swansea, Swansea, SA2 8PP, UK
SOURCE: Journal of Insect Physiology (1985), 31(10), 789-99
CODEN: JIPHAF; ISSN: 0022-1910
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Expts. indicate that the prophenoloxidase activating system, which is responsible for melanin production, is also involved in immunorecognition in insects. Using hemocyte monolayer prepns. of Blaberus craniifer, Galleria mellonella and Leucophaea maderae, it was shown that laminarin, a β 1,3-glucan extracted from fungal cell walls and an activator of the prophenoloxidase system, enhanced the phagocytosis of test bacteria. SEM of hemocyte monolayers showed that incubation of test bacteria with laminarin significantly increased the number of microorganisms attached to both the plasmatocytes and the granular cells. Furthermore, with the granular cells these bacteria became entrapped in an amorphous matrix. This material probably consists of the sticky proteins previously reported to be produced by crustacean hemocytes following prophenoloxidase activation. Pretreatment of hemocytes with laminarin abolished the stimulatory effect on ingestion, indicating that these sticky proteins are opsonic, since they would have been discharged from the hemocytes onto the glass monolayer leaving few mols. available for subsequent coating of the test particles. Preliminary biochem. studies on the G. mellonella prophenoloxidase system demonstrated that it was activated by trypsin, laminaran and laminaran G, a highly purified β 1,3-glucan, but not by dextran. Serine protease activities were also enhanced by adding laminarin to a hemocyte lysate supernatant, suggesting that the stimulatory mechanism may involve the proteolytic activity of such enzymes.

L16 ANSWER 5 OF 6 MEDLINE on STN
ACCESSION NUMBER: 2006517279 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 16816147
TITLE: Differential infection of mononuclear phagocytes by Francisella tularensis: role of the macrophage mannose receptor.
AUTHOR: Schulert Grant S; Allen Lee-Ann H
CORPORATE SOURCE: Inflammation Program and Department of Microbiology, University of Iowa, 2501 Crosspark Rd., Coralville, 52241, USA.
CONTRACT NUMBER: P01-AI44642 (NIAID)
SOURCE: Journal of leukocyte biology, (2006 Sep) Vol. 80, No. 3, pp. 563-71. Electronic Publication: 2006-06-30.
Journal code: 8405628. ISSN: 0741-5400.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 31 Aug 2006
Last Updated on STN: 29 Sep 2006

AB Francisella tularensis (Ft) is a Gram-negative bacterium and the causative agent of tularemia. It is well established that this organism replicates inside macrophages, but we are only beginning to understand this interface at the molecular level. Herein, we compared directly the ability of Ft subspecies holarctica live-vaccine strain to infect freshly isolated human peripheral blood monocytes, monocyte-derived macrophages (MDM), and cells of the murine macrophage cell line J774A.1 (J774). We now show that unopsonized bacteria infected human MDM fivefold more efficiently than monocytes or J774 cells in standard media.

Moreover, enhanced infection of MDM was mediated, in part, by the macrophage mannose receptor (MR). Forming Ft phagosomes accumulated MR, and infection was inhibited by MR-blocking antibody or soluble mannan but not by the dectin-1 ligand laminarin. Up-regulation of MR in MDM (by exposure to interleukin-4) increased Ft phagocytosis, as did expression of MR in J774 cells. Conversely, opsonized Ft were ingested readily by monocytes and MDM. Medium supplementation with 2.5% fresh autologous serum was sufficient to confer opsonophagocytosis and CD11b accumulated in the membrane at sites of Ft engulfment. Infection of monocytes by opsonized Ft was nearly ablated by complement receptor 3 (CR3) blockade. Conversely, MDM used MR and CD11b/CD18 to ingest opsonized organisms. Altogether, our data demonstrate differential infection of mononuclear phagocytes by Ft and define distinct roles for MR and CR3 in phagocytosis.

L16 ANSWER 6 OF 6 MEDLINE on STN
ACCESSION NUMBER: 2005089409 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15719611
TITLE: Laminarin enhanced immunological disorders of septicimeric albino rats infected with Aeromonas hydrophila.
AUTHOR: Awad Ezzat M; Osman Osman A
CORPORATE SOURCE: Departments of Zoology, Faculty of Science, Minia University, El-Minia, Egypt.
SOURCE: The Egyptian journal of immunology / Egyptian Association of Immunologists, (2003) Vol. 10, No. 2, pp. 49-56. Journal code: 9816016. ISSN: 1110-4902.
PUB. COUNTRY: Egypt
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200503
ENTRY DATE: Entered STN: 22 Feb 2005
Last Updated on STN: 19 Mar 2005
Entered Medline: 18 Mar 2005

AB Aeromonas hydrophila is increasingly recognized as a pathogen of man that gives rise to both intestinal and extraintestinal infection. This study examined the effect of one the immunostimulants; fungal cell-wall beta-1, 3-D-glucan (Laminarin) on the immune response to Aeromonas hydrophila in albino rats. Intraperitoneal injection of 0.2 ml of 1% laminarin (15 mg/100 g b.wt) stimulated humoral immunity. On the ninth day, after application of laminarin in vivo, a statistically higher value of total Ig ($p < 0.05$) was observed. At the same time, serum total immunoglobulins (25.5 +/- 2) g/L in bacterial groups were significantly higher ($p < 0.05$), compared to the control group (17 +/- 2) g/L. For Aeromonas infected group, all Ig classes showed increase statistically significant ($p < 0.05$). On the other hand laminarin groups exhibited reduced values of Ig subclasses but still higher than control values. This was reported for all time period. Rats were divided into 3 equal groups designated, Aeromonas infected, Laminarin-treated and control groups. Infection was carrid out by intraperitoneal injection of 2 x 10(6) bacteria daily for 6 days.

7 ANSWER 1 OF 1 MEDLINE on STN
ACCESSION NUMBER: 96154810 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8586670
TITLE: Characterisation of a laminarin sulphate which inhibits basic fibroblast growth factor binding and endothelial cell proliferation.
AUTHOR: Hoffman R; Paper D H; Donaldson J; Alban S; Franz G
CORPORATE SOURCE: Clinical Oncology and Radiotherapeutics Unit, MRC Centre, Cambridge, UK.
SOURCE: Journal of cell science, (1995 Nov) Vol. 108 (Pt 11), pp. 3591-8.
Journal code: 0052457. ISSN: 0021-9533.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199603
ENTRY DATE: Entered STN: 4 Apr 1996
Last Updated on STN: 4 Apr 1996
Entered Medline: 25 Mar 1996

AB We have evaluated a series of laminarin sulphates with different degrees of sulphation (0.3-2.3) as antagonists of basic fibroblast growth factor (bFGF) and as inhibitors of the bFGF-dependent endothelial cell line FBHE. Inhibition of binding of bFGF by the laminarin sulphates increased with increasing degree of sulphation. Binding of bFGF to low affinity sites on BHK cells was inhibited more strongly than binding to high affinity sites. IC50 values for inhibition of binding to low and high affinity sites by the most highly sulphated laminarin sulphate (LAM S5; degree of sulphation 2.31) were 12 +/- 8 micrograms/ml and 69 +/- 66 micrograms/ml, respectively. LAM S5 dissociated bFGF from low affinity sites on BHK cells but not from high affinity sites. LAM S5 increased the electrophoretic mobility of bFGF indicating that LAM S5 binds directly to bFGF. LAM S5 reduced uptake of bFGF by FBHE cells by 67%. Increasing the degree of sulphation of laminarin sulphates increased the inhibition of bFGF-stimulated DNA synthesis of the endothelial cell line FBHE (IC50 for LAM S5 approx. 1 microgram/ml). There was no inhibition of DNA synthesis of FBHE cells by LAM S5 in the presence of 1 microgram/ml bFGF indicating that bFGF antagonism is involved in the anti-proliferative activity of this compound. LAM S5 may be of value against diseases associated with bFGF-dependent cell proliferation.

L19 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:394530 CAPLUS
DOCUMENT NUMBER: 142:423818
TITLE: Therapeutical combination against cancer comprising a monoclonal antibody with a glucan
INVENTOR(S): Yvin, Jean-Claude; Panak, Edouard; Vetvicka, Vaclav
PATENT ASSIGNEE(S): Laboratoire Goemar SA, Fr.
SOURCE: U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005095250	A1	20050505	US 2003-698034	20031030
US 7070778	B2	20060704		
WO 2005049044	A1	20050602	WO 2004-EP13119	20041029
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1684770	A1	20060802	EP 2004-791108	20041029
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				

PRIORITY APPLN. INFO.: US 2003-698034 A 20031030
WO 2004-EP13119 W 20041029

AB The present invention relates to compns. and methods for treating humans and warm-blood animals suffering from cancer. More particularly, a therapeutical treatment in which a monoclonal antibody is administered with either β-(1,3)-glucan like laminarin or an oligo-β-(1,3)-glucan and a pharmaceutically acceptable carrier, to patients suffering from cancer are described. Female nude mice were implanted s.c. with human breast carcinoma cell line. Mice were injected i.p. with combination of Phycarine 500 mg/kg, once a day for 5 days and Herceptin 0.5 mg/kg, twice a week during 3 wk. The combined administration of Phycarine and Herceptin allowed a limitation in the increase of the tumor weight which was far higher than the mean value obtained when administering Herceptin or Phycarine alone; said activity on the tumor weight being even equivalent to the one obtained when administering a conventional dosage of taxol.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:259651 CAPLUS
DOCUMENT NUMBER: 142:291363
TITLE: Chemotherapeutic antineoplastic treatment
INVENTOR(S): Yvin, Jean-Claude; Vetvicka, Vaclav
PATENT ASSIGNEE(S): Fr.
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005065111	A1	20050324	US 2003-668661	20030923
WO 2005027938	A1	20050331	WO 2004-EP10993	20040916
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
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EP 1663260	A1	20060607	EP 2004-787076	20040916
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				

PRIORITY APPLN. INFO.:
US 2003-668661 A 20030923
WO 2004-EP10993 W 20040916

AB Chemotherapeutic method for the treatment of cancer comprising administration of an effective amount of an antineoplastic agent in conjunction with an effective amount of a β-1,3 glucan is disclosed.

L25 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:259651 CAPLUS
DOCUMENT NUMBER: 142:291363
TITLE: Chemotherapeutic antineoplastic treatment
INVENTOR(S): Yvin, Jean-Claude; Vetvicka, Vaclav
PATENT ASSIGNEE(S): Fr.
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005065111	A1	20050324	US 2003-668661	20030923
WO 2005027938	A1	20050331	WO 2004-EP10993	20040916
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1663260	A1	20060607	EP 2004-787076	20040916
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				

PRIORITY APPLN. INFO.: US 2003-668661 A 20030923
WO 2004-EP10993 W 20040916

AB Chemotherapeutic method for the treatment of cancer comprising administration of an effective amount of an antineoplastic agent in conjunction with an effective amount of a β-1,3 glucan is disclosed.

L27 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:259651 CAPLUS
DOCUMENT NUMBER: 142:291363
TITLE: Chemotherapeutic antineoplastic treatment
INVENTOR(S): Yvin, Jean-Claude; Vetvicka, Vaclav
PATENT ASSIGNEE(S): Fr.
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005065111	A1	20050324	US 2003-668661	20030923
WO 2005027938	A1	20050331	WO 2004-EP10993	20040916
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1663260	A1	20060607	EP 2004-787076	20040916
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				

PRIORITY APPLN. INFO.: US 2003-668661 A 20030923
WO 2004-EP10993 W 20040916

AB Chemotherapeutic method for the treatment of cancer comprising administration of an effective amount of an antineoplastic agent in conjunction with an effective amount of a β-1,3 glucan is disclosed.

L27 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:157159 CAPLUS
DOCUMENT NUMBER: 132:344175
TITLE: Quantitative high-performance liquid chromatographic determination of acrolein in plasma after derivatization with Luminarin 3
AUTHOR(S): Paci, A.; Rieutord, A.; Guillaume, D.; Traore, F.; Ropenga, J.; Husson, H.-P.; Brion, F.
CORPORATE SOURCE: Service de Pharmacie-Toxico-Pharmacologie, Hopital Robert Debre, Paris, 75019, Fr.
SOURCE: Journal of Chromatography, B: Biomedical Sciences and Applications (2000), 739(2), 239-246
CODEN: JCBBEP; ISSN: 0378-4347
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A rapid, sensitive and specific high-performance liquid chromatog. method for the quantification of acrolein (1), one of the toxic metabolites of oxazaphosphorine alkylating agents (cyclophosphamide and ifosfamide) was developed. Condensation of acrolein with Luminarin 3 afforded a fluorescent derivative that could be specifically detected and quantified. Chromatog. conditions involved a C18 RP column Uptisphere and a gradient elution system to optimize resolution and time anal. The method showed high sensitivity with a limit of detection of 100 p mol/mL and a limit of quantification of 300 p mol/mL. This technique is particularly suitable for pharmacokinetic studies on plasma of oxazaphosphorine-receiving

patients.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> d his

     (FILE 'HOME' ENTERED AT 12:10:54 ON 06 DEC 2006)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 12:11:07 ON 06 DEC 2006
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L2            26 S LAMINARIN? (P) PROMOT? (P) CELL?
L3             0 S L2 AND MORROW?
L4             0 S L2 AND BONE?
L5             0 S L2 AND BLOOD?
L6             0 S L2 AND ?NEOPLAST?
L7             0 S L2 AND ?CHEMOTHERAP?
L8             0 S L2 AND ?THERAP?
L9             0 S L2 AND PATIENT?
L10            0 S L2 AND ADMINIST?
L11            0 S L2 AND PERIPHERAL
L12            0 S L2 AND CYCLOPHOS?
L13            5 S LAMINARIN (P) LEUKEM?
L14          202 S LAMINARIN? (P) INCREA? (P) CELL?
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L16            6 S L14 AND BLOOD?
L17            1 S L14 AND ?NEOPLAST?
L18            0 S L14 AND CHEMOTHER?
L19            1 S L14 AND ANTITUMOR?
L20            0 S L14 AND REJEUV?
L21            0 S L14 AND REPLEN?
L22            0 S LAMINARIN? (P) ?NEOPLAST? (P) CELL?
L23            0 S LAMINARIN? (P) ?CHEMOTHER? (P) CELL?
L24            1 S LAMINARIN? (P) ?NEOPLAST?
L25            1 S LAMINARIN? (P) ?CHEMOTHER?
L26            0 S LAMINARIN? (P) CLYCOPHOSPHAMIDE?
L27            2 S LAMINARIN? (P) CYCLOPHOSPHAMIDE?
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